

## APPENDIX I

# HISTORY OF THE HOSPITAL CORPS UNITED STATES NAVY

### ORIGIN AND DEVELOPMENT OF THE CORPS

Few military organizations can look upon their histories with the same degree of pride and awe as the Navy Hospital Corps. Since the establishment of the Navy medical department in Colonial times and the commissioning of the Hospital Corps a century ago, Hospital Corpsmen and their forerunners have proven themselves ready to support Marines and Sailors by giving them aid whenever and wherever necessary. This level of dedication has remained a strong current running through the Corps' history, even as the tools and techniques used by its members have evolved.

### REVOLUTIONARY WAR

The first direction given to the organization of Navy medicine consisted of only one article in the *Rules for the Regulation of the Navy of the United Colonies of North America* of 1775. Article 16 stated:

A convenient place shall be set apart for sick or hurt men, to be removed with their hammocks and bedding when the surgeon shall advise the same to be necessary: and some of the crew shall be appointed to attend to and serve them and to keep the place clean. The cooper shall make buckets with covers and cradles if necessary for their use.

Interestingly, the cooper (or barrel-maker), whose skills could be used to make bedpans, had a more detailed job description than did any kind of trained medical assistant.

A typical medical section was usually limited to two, perhaps three men: the surgeon, the surgeon's mate, and possibly an enlisted man. The surgeon was a physician. The surgeon's mate, usually a doctor as well, held status like that of a modern warrant officer but signed on only for a particular cruise. Although surgeons' mates were historically viewed as part of the Medical Corps, their position and responsibilities appear to be more equivalent to those of today's senior Hospital Corpsmen.

Few things changed in medical techniques and organization between 1775 and 1814, the period covering America's first naval wars. Among the less dramatic responsibilities of caring for the noncombat ill and injured were feeding and personal care of the sick. The simple daily ration of porridge, or "loblolly," was sure to be carried down to those in the medical space by untrained attendants.

### SURGEON'S MATES AND LOBLOLLY BOYS

Congress approved an act on March 2, 1799, which copied the words of the Continental Congress' medical department Article 16 of 1775 exactly. As a result, there was still no title or job description for enlisted medical personnel. The nickname "loblolly boy" was in common use for so many years that it became the official title in Navy Regulations of 1814. The loblolly boy's job, described in the Regulations of 1818, included the following:

The surgeon shall be allowed a faithful attendant to issue, under his direction, all supplies and provisions and hospital stores, and to attend the preparation of nourishment for the sick. . . . The surgeon's mates shall be particularly careful in directing the loblolly boy to keep the cockpit clean, and every article therein belonging to the Medical Department. . . . The surgeon shall prescribe for casual cases on the gun deck every morning at 9 o'clock, due notice having been previously given by his loblolly boy by ringing of a bell.

### SURGEON'S STEWARDS AND LOBLOLLY BOYS

A new senior enlisted medical rate, surgeon's steward, was introduced in the ensuing decades. The term is first seen in 1841 in Navy pay charts, but it appears that the new billet was only allowed on larger ships. By April 1, 1843, the Navy Department issued an order allowing surgeon's stewards to be assigned to brigs and schooners. The relative importance of

medical Sailors was hereby increased. Surgeon's stewards ranked second in seniority among the ship's petty officers, next only after the master-at-arms.

## **SURGEON'S STEWARDS AND NURSES**

The year 1861 brought civil war to this country, and—due to the enormous expansion of the Navy because of the war—changes and developments in the medical department ensued. On June 19, 1861, a Navy Department circular order established a new name for the loblolly boy.

In addition to a surgeon's steward, 1 nurse would be allowed for ships with a complement of less than 200; 2 nurses would be allowed for ships with a complement of more than 200; and sufficient nurses would be allowed on receiving ships in a number proportionate to the necessities of the vessel.

While the shipboard medical department changed the titles of its personnel, new techniques in mass care of the sick and wounded were also developed. A captured sidewheel steamer was repaired and modified to care for patients. Refinements to the ship included bathrooms, kitchens, and laundries—even elevators and the facilities to carry 300 tons of ice. On December 26, 1862, the USS *Red Rover* became the first Navy vessel specifically commissioned as a hospital ship. The medical complement included 30 surgeons and male nurses, as well as four nuns.

## **APOTHECARIES AND BAYMEN**

Postwar reductions in the size of the Navy brought new classifications to enlisted medical personnel. The title "surgeon's steward" was abolished in favor of three grades of apothecaries in 1866. Those selected as apothecaries had to be graduates of a course in pharmacy or possess the same knowledge gained through practical experience. The Apothecary, First Class, ranked with a warrant officer, while the second and third classes were petty-officer equivalents. The three rates were reduced to one petty officer apothecary on March 15, 1869.

"Nurse," as a title for junior enlisted medical personnel, was replaced by the title "bayman" (defined as one who manned the sick bay) in the early 1870s. U.S. Navy Regulations of 1876 used the title officially, and it remained valid for 22 more years.

An apothecary of the 1890s mixed and dispensed all medication aboard a ship. He was responsible for

all medical department reports, supply requests, and correspondence, and he helped maintain medical department records. The apothecary administered anesthesia during surgery and was the primary instructor for new baymen.

The apothecaries' responsibilities did not end there, however. (See figure APP-I-1.) During shipboard surgery, the bayman focused an electric light on the incision site while the surgeon did his work on what served as a combination of both writing and operating table. He sterilized surgical instruments by boiling them, then stored them in a solution of 5 percent phenol. Bandages and dressings were sterilized by baking them in a coffee can in the ship's oven. Sick bay itself was prepared for surgery by wiping the entire room down with a chlorine solution. On days when the ship's routine called for scrubbing bags and hammocks, a bayman was responsible for washing those of the sick. When required, he painted the ship's medical spaces.

During the last two decades of the 1800s, many in the naval medical establishment called for reforms in the enlisted components of the medical department. Medicine had by now progressed far more as a science, and civilian hospitals all had teaching schools for their nurses. Foreign navies had trained medical Sailors, and the U.S. Army had established its own Hospital Corps of enlisted men on March 1, 1887. Navy Surgeon General J. R. Tryon argued, in his annual report of 1893, against the practice of assigning landsmen to the medical department with nothing more than on-the-job-training. He advocated the urgent need for an organized hospital corps.

Physicians in the fleet were equally certain of the need for changes. Surgeon C. A. Sigfried of the USS *Massachusetts* made his views known in his report to the Surgeon General in 1897.

The importance of improving the medical department of our naval service is more and more apparent, in view of the recent advances in the methods and rapidity of killing and wounding. The great want is a body of trained bay men or nurses, and these should be better paid and of better stamp and fiber. Now and then we procure a good man, and proceed with his training as a bay man. He soon finds opportunity for betterment in some one of the various departments of the ship, in the matter of pay and emolument, either in some yeoman's billet or in some place where his meager \$18 per month can be suddenly



Figure APP-I-1.—An apothecary (petty officer first class) treats a shipmate aboard the USS *Boston* in 1888.

increased to \$30, \$40, or even \$60 per month. The bay man, who should be an intelligent, sober man, and well trained in many things pertaining to nursing, dieting, ambulance, and aids to wounded, and have a moderate amount of education, finds his pay at present among the lowest in the ship's company; even the men caring for storerooms get more per month.

### HOSPITAL STEWARDS AND HOSPITAL APPRENTICES

Arguments for a professional, well-trained group of individuals to provide medical care for the Navy finally paid off, although it took the imminent danger of combat in the Spanish-American War to spur Congress into action. Within a bill aimed at building the armed forces was a section to provide for the Navy's long-needed Hospital Corps. It was approved by President William McKinley on June 17, 1898. From that date to the present, either generically or by

rating title, medical Sailors have been called "Hospital Corpsmen."

To ensure that the members of the new Hospital Corps were adequately trained in the disciplines pertinent to both medicine and the Navy, a basic school for corpsmen was established at the U.S. Naval Hospital Norfolk (Portsmouth), Virginia. Originally called the School of Instruction, it opened September 2, 1902. Its curriculum included anatomy and physiology, bandaging, nursing, first aid, pharmacy, clerical work, and military drill. The first class of 28 corpsmen was graduated on December 15, 1902. (See figure APP-I-2.)

The school continued for a brief time and was then moved to the Naval Hospital in Washington, D.C., remaining in existence there until 1911. For the next 3 years, there was no basic school for corpsmen, but the concept was revived in 1914. The next two Hospital Corps Training Schools were opened in Newport, Rhode Island, and on Yerba Buena Island, California.



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Figure APP-I-2.—A hospital steward (chief petty officer) and two hospital apprentices from a ship's landing party medical section, 1905.

## HOSPITAL APPRENTICES AND PHARMACIST'S MATES

The next revision in the structure of the Hospital Corps came by act of Congress on August 29, 1916. Under this plan, the rates were hospital apprentices, second class and first class (both of whom wore a red cross on the sleeve); pharmacist's mates, third, second, and first; and chief pharmacist's mate. The officer contingent of the Hospital Corps included the two warrant officer ranks of pharmacist and chief pharmacist. The reorganization allowed for a massive, fivefold increase in the size of the Hospital Corps.

At the start of 1917, the Hospital Corps counted 1,700 men in its ranks. A concerted effort to recruit and train new personnel enabled the corps to reach its authorized strength of 3 1/2 percent of the Navy and Marine Corps, or 6,000 men. But as these plans came to fruition, the United States entered World War I in

April. By the end of 1918, the corps peaked at about 17,000.

## PHARMACIST'S MATES IN WORLD WAR I

The massive wartime expansion in Hospital Corps strength necessitated additional schools to train the newcomers. Hospital Corps School, Great Lakes, Illinois, had been established in January 1913. Wartime schools were created in Minneapolis at the University of Minnesota, in New York at Columbia University, and at the Philadelphia College of Pharmacy. A school for Naval Reserve Force Hospital Corpsmen was set up at Boston City Hospital. Other crash-course schools for shipboard personnel were conducted at a number of other civilian hospitals. Hospital Corpsmen who were needed to serve as medical department representatives on small vessels such as destroyers were trained at the Pharmacist's Mate School at Hampton Roads, Virginia, the

forerunner of the Independent Duty Hospital Corpsman School.

Hospital Corpsmen were assigned to the multitude of duty types and locations needed to support a Navy involved in a world war. Naval hospitals were opened and staffed. Ships and aircraft squadrons were given medical support. At sea, the dangers of the new war were ever present.

Naval training facilities and shore establishments needed Hospital Corpsmen, as did occupation forces in Haiti and other bases around the world. But World War I provided the Hospital Corps a role that would afford it some of the most dangerous challenges it would ever face: duty with the Marine Corps.

Assignment to Marine Corps units was not completely new. Hospital Corpsmen were serving with Marine occupational forces in Cuba, Haiti, and Santo Domingo at the outbreak of the war, and they had seen other similar service. It was the change of the Marine Corps' role to one of expeditionary forces in a large-scale ground war that changed what Hospital Corpsmen would do. Sick call and preventive medicine were continuous roles that remained unchanged. Facing artillery, mustard gas, and machine gunfire were new experiences.

A heritage of valorous service with the Marines was born, as evidenced by two Hospital Corpsmen receiving the Medal of Honor. Other decorations to Hospital Corpsmen included 55 Navy Crosses, 31 Army Distinguished Service Crosses, 2 Navy Distinguished Service Medals, and 237 Silver Stars. A hundred foreign personal decorations were granted to Navy Hospital Corpsmen, and 202 earned the right to wear the French Fourragère shoulder aiguillette permanently. Their 684 personal awards make the Hospital Corps, by one account, the most decorated American unit of World War I.

## **PHARMACIST'S MATES IN WORLD WAR II**

World War II became the period of Hospital Corps' greatest manpower, diversity of duty, and instance of sacrifice. Between 1941 and 1945, the ranks of this small organization swelled from its prewar levels of near 4,000 to more than 132,000 personnel. This increase came to fulfill new responsibilities with new technologies at new duty stations. In the face of great adversity, the Hospital Corps would cement its reputation for effectiveness and bravery.

The Navy's fleet expanded to thousands of ships, and the Marine Corps grew from a few regiments to six divisions. A two-ocean war produced horrific numbers of casualties, and the Hospital Corps grew to meet the needs of casualty collection, treatment, and convalescence. To educate the influx of new Sailors, Hospital Corps Training School at Portsmouth, Virginia, was augmented by a temporary school at Naval Hospital Brooklyn, New York. The school at Great Lakes was recreated in 1942, and others were started at Farragut, Idaho, and at Bainbridge, Maryland, in 1943. A separate Hospital Corps Training School was established for women (fig. APP-I-3) at Bethesda, Maryland, in January 1944. Specialized schools were opened to train pharmacist's mates for independent duty and for service with the Marines. Additionally, courses were established to instruct personnel on new equipment and techniques in dozens of developing medical fields.

Shore-based duty sent Hospital Corps personnel to hospitals and dispensaries in the United States and abroad. Advance-base hospitals on newly captured Pacific islands formed a crucial link in the chain of evacuation from battle sites. Those facilities in Hawaii or England received casualties from their respective fronts, and wounded service personnel recuperated in Stateside hospitals. Hospital Corpsmen made the treatment of American casualties possible at each of these by providing technical support and direct patient care.

Duty on surface ships afforded Hospital Corpsmen numerous challenges and abundant environments in which to face them. Hospital ships required the services of personnel in much the same way as shore-based hospitals, except that those on ship were afloat and subject to attack. Other classes of vessels, such as landing ships and patrol craft (LSTs and PCERs), became large floating clinics/ambulances which required additional Hospital Corps personnel. Additionally, combatant ships and transports in the Atlantic, Pacific, and Mediterranean theaters took casualties from ships, aircraft, and submarines throughout the war, necessitating the service of well-trained Hospital Corpsmen.

Approximately 300 Hospital Corpsmen sat out all but the early days of the war when they were captured in the Philippines by the invading Japanese. In prisoner-of-war camps and huddled in POW "hell ships," they endured malnutrition, disease, torture, and brutality. One hundred thirty-two Hospital Corpsmen died as prisoners during World War II, a death rate almost 20 percent higher than among other American POWs.



Figure APP-I-3.—Women entered the Hospital Corps in World War II as WAVES.

Hospital Corpsmen served on the beaches not only in the island campaigns of the Pacific, but in Europe as well. Teams of Navy medical personnel formed aid stations with beach battalions at Sicily and Normandy, treating Army and allied wounded under fire. Hospital Corpsmen ensured the survival of these casualties until they could reach hospitals in England.

Of all the Hospital Corpsmen in World War II, Fleet Marine Force personnel endured, perhaps, the most grueling side of war. As they swarmed numerous beaches in the Pacific, they became targets themselves as they braved fire to reach downed comrades. At Guadalcanal, Tarawa, Peleliu, Saipan, Tinian, Kwajalein, Iwo Jima, and Okinawa, Hospital Corpsmen bled and died, often in greater numbers than the Marines for whom they cared. Hospital Corps casualties in the 4th Marine Division at Iwo Jima, for example, were 38 percent.

Members of the Hospital Corps treated some 150,000 combat casualties during the war. This

number does not include thousands of others—those plagued by disease and injured in the line of duty—who were aided by their medical shipmates. The cost of this service was high: 1,170 Hospital Corpsmen were killed in action and thousands more were wounded. But their valor was rewarded. Hospital Corpsmen earned 7 Medals of Honor (almost half of those awarded to Sailors in the war), 66 Navy Crosses, 465 Silver Star Medals, and 982 Bronze Star Medals.

### A NEW HOSPITAL CORPS

Massive reorganization of the armed forces took place after World War II. A new Department of Defense was established, and the Army-Navy Medical Service Corps Act removed commissioned allied health and medical administration officers from the Hospital Corps. This law also provided for a separate Dental Technician rating, which remained a component of the Hospital Corps until 1972. Women in the Hospital Corps had previously been WAVES, a

component of the U.S. Naval Reserve, but the new legislation permitted women to enlist in the Regular Navy.

Effective April 1, 1948, the Navy changed the names and insignia of the Hospital Corps. The new rating titles were hospital recruit, hospital apprentice, hospitalman, hospital corpsmen third, second, and first class, and chief hospital corpsman. The red Geneva cross (fig. APP-I-4), which had marked corpsmen for 50 years, was replaced in the rating badge with the original symbol of the winged caduceus. The rates of senior chief and master chief hospital corpsman were added in 1958.

### **HOSPITAL CORPSMEN IN KOREA**

As part of a United Nations force, Marines were committed to the Korean peninsula when South Korea was invaded by its northern neighbor in the summer of 1950. Within the first year, Hospital Corpsmen had participated in the dramatic landing at Inchon and the frigid retreat from the Chosin Reservoir. Although only one Marine division was involved in the war between 1950 and 1953, the Hospital Corps lost 108 killed in action. Disproportionate to their numbers was their heroism. In Korea, Hospital Corpsmen earned 281 Bronze Star Medals, 113 Silver Star Medals, and 23 Navy Crosses. All five enlisted Navy Medals of Honor were awarded to Navy Hospital Corpsmen serving with the Marines.

### **HOSPITAL CORPSMEN IN VIETNAM**

American military commitment in Southeast Asia grew in the decades following World War II. As early as 1959, a few Hospital Corpsmen provided medical support for U.S. military personnel as part of the American Dispensary at the U.S. Embassy. Four years later, in 1963, Navy Station Hospital, Saigon, was created. Ninety Hospital Corpsmen staffed the facility, and provided care for U.S. and allied (Australian, New Zealand, Filipino, and South Korean) military, as well as South Vietnamese civilians. These medical personnel conducted routine medical care and treated the victims of combat and terrorist actions until the hospital was transferred to the Army in 1966.

Hospital Corpsmen were assigned aboard ships of various kinds, providing offshore medical support to U.S. forces. The largest commitment here was on the hospital ships *USS Repose* and *USS Sanctuary*. Some 200 Hospital Corpsmen, representing the gamut of technical specialties, worked on each ship. Teams of 20 Hospital Corpsmen served on LPH-class

amphibious ships. Others supported the riverine force on APB-class base ships.

U.S. State Department initiatives and the Medical Civic Action Program (MEDCAP) provided medical support for Vietnamese civilians. Beyond routine aid and treatment, the Hospital Corpsmen working through these programs provided guidance in sanitation and preventive medicine throughout South Vietnam.

By far the Hospital Corps' largest contribution in Vietnam was with Marine Corps units. Starting with the 50 who landed with the Marines at Da Nang in 1965, the enlisted medical component would grow to 2,700 Hospital Corpsmen assigned to 1st and 3d Marine Divisions, 1st Marine Air Wing, and other combat support units. Two medical battalions and two hospital companies operated field hospitals, collecting and clearing units, and dispensaries that treated the flow of combat casualties from the field. Closer support was provided at the battalion aid station (BAS) level, where casualties could be stabilized before evacuation to more definitive care. The BAS was often bypassed because of the exceptional medical evacuation capabilities of helicopter medical evacuation (MEDEVAC).

The most dangerous role of the Hospital Corpsman in Vietnam was in the field. Special units (such as Navy SEAL teams and Marine reconnaissance units) took medical Sailors with them, as did the artillery, air, and infantry elements of the Marine Corps. Most of the 53 Hospital Corpsmen assigned to an infantry battalion served with rifle companies, one or two men per platoon of about 40. These Sailors patrolled with their Marines, risked the same dangers, and rendered the aid that saved the lives of thousands.

### **HOSPITAL CORPSMEN SINCE VIETNAM**

Since April 1975, Hospital Corpsmen have continued to serve in the many "hot spots" around the world. Fifteen Hospital Corpsmen were killed in action when the Marine headquarters in Beirut, Lebanon, was attacked and destroyed by a suicide truck bomber on October 23, 1983. Hospital Corpsmen were present at sea and ashore when the United States took military action in Grenada, and then again when they faced both bullets and the needs of a starving populace in Somalia.

The 1990-91 Iraqi invasion of Kuwait gained a strong response from the United States and the world in the form of Desert Shield/Desert Storm. Preparations

were made to drive the Iraqi Army out of the tiny country, and corpsmen were readied to respond to the needs of their shipmates. Hospital Corpsmen around the globe reacted, as their ships, stations, and Marines deployed or prepared to receive casualties. In fact, the first Navy casualty of Desert Storm was a Hospital Corpsman. Of the vast number of Naval Reservists called to active duty, the largest single group activated consisted of Hospital Corpsmen. Of an inventory of just more than 12,000 Hospital Corpsmen in the Naval Reserve, some 6,700 were recalled to active duty. The largest group of them, about 4,600, served at medical treatment facilities and casualty receiving centers; approximately 1,100 went to Marine Corps units; about 840 were attached to Fleet Hospitals Six and Fifteen; and some 470 of the reservists were assigned to the hospital ships *Mercy* and the *Comfort*.

### **HOSPITAL CORPSMEN TODAY**

Today's Hospital Corpsmen perform as assistants in the prevention and treatment of disease and injury. They assist with physical examinations, provide patient care, and administer medicinals. They perform general laboratory, pharmacy, and other patient support services. They assist in the administrative, supply, and accounting procedures within medical departments ashore, afloat, and with the Marine Corps. They instruct medical and nonmedical personnel in first aid, self-aid, personal hygiene, and medical records maintenance. They assist in the maintenance of environmental health standards, and they are prepared to assist in the prevention and treatment of CBR casualties and in the transportation of the sick and injured. Senior Hospital Corpsmen perform technical

planning and management functions in support of medical readiness and quality health care delivery.

In addition to their general assignments, Hospital Corpsmen trained as technicians perform specialized functions within the operational forces, clinical specialties, and administrative department, and they may be assigned duties independent of a medical officer. These complex duties require that each Hospital Corpsman have broad-based training and a versatility neither demanded nor expected of other enlisted rating in the Navy.

Wherever you find the Navy, wherever you find the Marine Corps, there you will find Navy Hospital Corpsmen. In times of peace, they toil unceasingly, day and night, providing quality care to numerous beneficiaries. In times of war, they are on the beaches with the Marines, employed in amphibious operations, in transportation of wounded by air, on the battlefield, and on all types of ships, submarines, aircraft carriers, and landing craft. Their innumerable instances of heroism, during which they have consciously exposed themselves to danger to save lives, are not spectacular because the corpsmen were required to act. Rather, their bravery is exceptional because it was not required, but given freely and willingly in service to their country and their fellow humanity, above and beyond the call of duty.

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Abridged from "The U.S. Navy Hospital Corps: A Century of Tradition, Valor, and Sacrifice," by HMCS(FMF) Mark T. Hacala, USNR, with permission from the author.

## APPENDIX II

# COMMONLY USED ABBREVIATIONS

AA . . . . .	Alcoholics Anonymous	DTs . . . . .	delerium tremens (confusion and incoherence brought on by withdrawal from alcohol)
ACTH . . . . .	adrenocorticotrophichormon	D <sub>x</sub> . . . . .	diagnosis
ADH . . . . .	antidiuretic hormone	ea . . . . .	each
AIDS . . . . .	acquired immunodeficiency syndrome	ECG/EKG . . . . .	electrocardiogram
B-cells . . . . .	lymphocytes produced in the bone marrow	EM . . . . .	electron microscope
Ba . . . . .	barium	ENT . . . . .	ear, nose, and throat
Bid . . . . .	2 times a day	F . . . . .	Fahrenheit
BP . . . . .	blood pressure	FAC . . . . .	free available chlorine
BUMED . . . . .	Bureau of Medicine and Surgery	FBS . . . . .	fasting blood sugar
BUN . . . . .	blood, urea, nitrogen (test of kidney function)	FDA . . . . .	Food and Drug Administration
BW . . . . .	biological warfare	Fe . . . . .	iron
C . . . . .	Celsius (centigrade)	FSC . . . . .	<i>Federal Supply Catalog</i>
Ca . . . . .	calcium	FSH . . . . .	follicle-stimulating hormone
CAAC . . . . .	Counseling and Assistance Center	g/gm . . . . .	gram
CBC . . . . .	complete blood count	GI . . . . .	gastrointestinal
CBR . . . . .	chemical, biological, and radiological (warfare)	gr . . . . .	grain
cc . . . . .	cubic centimeter/1 ml	gtt . . . . .	drops
CCU . . . . .	coronary care unit	GTT . . . . .	glucose tolerance test
CHF . . . . .	congestive heart failure	GU . . . . .	genitourinary
Cl . . . . .	chlorine	h.s. . . . .	at bedtime ( <i>hora somni</i> )
CNS . . . . .	central nervous system	Hb/Hgb . . . . .	hemoglobin
CO <sub>2</sub> . . . . .	carbon dioxide	HCG . . . . .	human chorionic gonadotropin
COPD . . . . .	chronic obstructive pulmonary disease	Hct . . . . .	hematocrit
CSF . . . . .	cerebrospinal fluid	Hg . . . . .	mercury
CVA . . . . .	cerebrovascular accident	HIV . . . . .	human immunodeficiency virus
CW . . . . .	chemical warfare	hpf . . . . .	high-power field (microscope)
D&C . . . . .	dilation and curettage	I . . . . .	iodine
DC . . . . .	Dental Corps	I&O . . . . .	intake and output
DCA . . . . .	damage control assistant	ICU . . . . .	Intensive care unit
diff . . . . .	differential blood count	IM . . . . .	intramuscular
DME . . . . .	diving medical examination	IPPB . . . . .	intermittent positive-pressure breathing (asthma and emphysema therapy)
DNA . . . . .	deoxyribonucleic acid	IUD . . . . .	intrauterine device
DOB . . . . .	date of birth	IV . . . . .	intravenous
DOD . . . . .	Department of Defense		

IVP . . . . .	intravenous pyelogram	OBA . . . . .	oxygen breathing apparatus
JAG . . . . .	Judge Advocate General	OD . . . . .	right eye ( <i>oculus dexter</i> )
K . . . . .	potassium	OJT . . . . .	on-the-job training
KUB . . . . .	kidney, ureter, and bladder (abdominal x-ray)	OR . . . . .	operating room
l or L . . . . .	liter	OS . . . . .	left eye ( <i>oculus sinister</i> )
Lab . . . . .	laboratory	oz . . . . .	ounce
LES . . . . .	Leave and Earnings Statement	P . . . . .	phosphorus
LH . . . . .	luteinizing hormone	PAYPERSMAN . . . . .	<i>Pay and Personnel Procedures Manual</i>
LLQ . . . . .	left lower quadrant	pc . . . . .	after meals ( <i>post cibum</i> )
LMP . . . . .	last menstrual period	PDB . . . . .	paradichlorobenzene
LP . . . . .	lumbar puncture	PDR . . . . .	<i>Physicians' Desk Reference</i>
LUQ . . . . .	left upper quadrant	PH . . . . .	hydrogen ion concentration (alkalinity and acidity measurement)
m . . . . .	meter	PID . . . . .	pelvic inflammatory disease
MANMED . . . . .	<i>Manual of the Medical Department</i>	po . . . . .	orally ( <i>per os</i> )
MC . . . . .	Medical Corps	poly . . . . .	segmented neutrophil (seg)
MCH . . . . .	mean corpuscular hemoglobin	post-op . . . . .	post-operative
MCHC . . . . .	mean corpuscular hemo- globin concentration	ppd . . . . .	purified protein derivative
MCV . . . . .	mean corpuscular volume	ppm . . . . .	parts per million
Med Board . . . . .	Department of Defense Medical Review Board	pre-op . . . . .	pre-operative
mg . . . . .	milligram	prn . . . . .	as required ( <i>pro re nata</i> )
MI . . . . .	myocardial infarction	PSD . . . . .	Personnel Support Detachment
MILPERSMAN . . . . .	<i>Naval Military Personnel Manual</i>	PVC . . . . .	premature ventricular contraction
ml . . . . .	milliliter	q4h . . . . .	every 4 hours
mm . . . . .	millimeter	q6h . . . . .	every 6 hours
MO . . . . .	medical officer	qd . . . . .	every day
MSC . . . . .	Medical Service Corps	qh . . . . .	every hour
N . . . . .	nitrogen	qid . . . . .	4 times a day
Na . . . . .	sodium	qns . . . . .	quantity not sufficient
NAVEDTRA . . . . .	Naval Education and Training	qt . . . . .	quart
NAVFINCEN . . . . .	Naval Finance Center	Ra . . . . .	radium
NAVMEDCOM . . . . .	Naval Medical Command	RBC . . . . .	red blood cell
NC . . . . .	Nurse Corps	Rh . . . . .	Rh factor (antigen in blood of some individuals)
NDRC . . . . .	Naval Drug Rehabilitation Center	RLQ . . . . .	right lower quadrant
NEC . . . . .	Naval Enlisted Classification	RUQ . . . . .	right upper quadrant
ng . . . . .	nasogastric	R <sub>x</sub> . . . . .	take (prescription)
NMPC . . . . .	Naval Military Personnel Command	sc/sub-q . . . . .	subcutaneous
npo . . . . .	nothing by mouth ( <i>nulli per os</i> )	SOAP notes . . . . .	the only accepted method of medical record entries for the military. (Subjective; Objective; Assessment; Plan)
NRTC . . . . .	nonresident training course		
O <sub>2</sub> . . . . .	oxygen		
OB . . . . .	obstetrics		

SOB . . . . .	shortness of breath	URI . . . . .	upper respiratory infection
stat . . . . .	immediately	USP-NF . . . .	United States Pharmacopeia-National Formulary
STD . . . . .	sexually transmitted disease	VA . . . . .	Veterans Administration
T-cells. . . . .	lymphocytes produced in the thymus gland	VD . . . . .	venereal disease
TAD/TEMADD . . . . .	temporary additional duty	VDRL. . . . .	Venereal Disease Research Laboratory (an antibody test for syphilis)
TB . . . . .	tuberculosis	vs . . . . .	vital signs
tbsp . . . . .	tablespoon	WBC . . . . .	white blood cell
tid . . . . .	3 times a day	WHO . . . . .	World Health Organization
tpr. . . . .	temperature, pulse, and respiration	YOB . . . . .	year of birth
TSH . . . . .	thyroid-stimulating hormone		
tsp . . . . .	teaspoon		
UIC . . . . .	unit identification code		



## APPENDIX III

# PREFIXES AND SUFFIXES USED IN MEDICAL TERMINOLOGY

Medical terminology uses components (i.e., prefixes and suffixes) to build words that represent medical conditions and procedures. These words can often seem intimidating until you learn how to break them down into their component parts.

### Examples of Combinations of Prefixes and Suffixes

**cholecystitis** = chole + cyst + itis (inflammation of the gallbladder)

- chole = gall
- cyst = bladder
- Itis = inflammation

**cholelithiasis** = chole + lith + iasis (condition resulting from gallstones)

- chole = gall
- lith = stone
- iasis = condition (resulting from)

**odontalgia** = odont + algia (tooth pain; toothache)

- odont = tooth
- algia = pain

**rhinoplasty** = rhino + plasty (to form or build up the nose)

- rhino = nose
- plasty = to form or build up

The following are some of the more common prefixes and suffixes used by healthcare providers to describe body conditions and procedures.

### PREFIXES

a-; an- . . . . . lacking; absence of  
ab- . . . . . away from

acr/o . . . . . extremities  
ad- . . . . . towards; addition of  
adip/o . . . . . fat  
aer/o . . . . . air  
amphi- . . . . . on both sides  
amyl/o . . . . . starch  
andr/o . . . . . male

angi/o . . . . .	vessel	cortic/o . . . . .	cortex
ankylo . . . . .	crooked; bent; stiff	cost/o . . . . .	ribs
ante- . . . . .	before	crani/o . . . . .	skull
anter/o; anteri/o . . . . .	front	cry/o . . . . .	cold
anti- . . . . .	against	crypt/o . . . . .	hidden
aque/o . . . . .	water	cutane/o . . . . .	skin
arthr/o . . . . .	joint	cyan/o . . . . .	blue
articul/o . . . . .	joint	cyst/o . . . . .	bladder
atel/o . . . . .	incomplete	cyt/o . . . . .	cell
audi/o . . . . .	hearing	dacry/o . . . . .	tear
aur/i . . . . .	ear	dactyl/o . . . . .	fingers; toes
auto- . . . . .	self	de- . . . . .	lack of
axill/o . . . . .	armpit	dent/i . . . . .	tooth
bacteri/o . . . . .	bacteria	derm/o; dermat/o . . . . .	skin
bene- . . . . .	good	di . . . . .	complete
bi/o . . . . .	life	dia- . . . . .	complete; through
bi- . . . . .	two	diaphor/o . . . . .	sweat
bil/i . . . . .	gall; bile	dist/o . . . . .	far
brachi/o . . . . .	arm	dors/o . . . . .	back (of body)
brady- . . . . .	slow	dys- . . . . .	difficult; painful
bucc/o . . . . .	cheek	ec-; ecto- . . . . .	out; outside
calc/o . . . . .	calcium	em- . . . . .	in
capit/o . . . . .	head	en- . . . . .	in; within
carcin/o . . . . .	cancer	encephal/o . . . . .	brain
cardi/o . . . . .	heart	endo- . . . . .	within
cata- . . . . .	down	enter/o . . . . .	intestines
caud/o . . . . .	tail; lower part of body	epi- . . . . .	above
caus/o . . . . .	burn	erg/o . . . . .	work
cauter/o . . . . .	heat; burn	erythr/o . . . . .	red
celi/o . . . . .	belly; abdomen	eso- . . . . .	inward
cephal/o . . . . .	head	estr/o . . . . .	female
cerebell/o . . . . .	cerebellum	eti/o . . . . .	cause
cerebr/o . . . . .	brain; cerebrum	eu- . . . . .	good
cervic/o . . . . .	neck; cervix	ex- . . . . .	out
chem/o . . . . .	drug; chemical	exo- . . . . .	outside
chol/e . . . . .	gall	fibr/o . . . . .	fibers; fibrous tissue
chondr/o . . . . .	cartilage	gastr/o . . . . .	stomach
chrom/o . . . . .	color	gen/o . . . . .	producing; beginning
chron/o . . . . .	time	germ/o . . . . .	sprout; seed
cib/o . . . . .	meals	gingiv/o . . . . .	gums
con- . . . . .	with; together	gloss/o . . . . .	tongue
contra- . . . . .	against; opposed to	gluc/o; glyc/o . . . . .	sugar
coron/o . . . . .	heart	gnos/o . . . . .	knowledge

gravid/o . . . . .	pregnancy	mon/o . . . . .	one; single
gynec/o . . . . .	woman; female	morph/o . . . . .	shape; form
hem/o; hemat/o . . . . .	blood	mort/o . . . . .	death
hemi- . . . . .	half	my/o . . . . .	muscle
hepat/o . . . . .	liver	myel/o . . . . .	spinal cord; bone marrow
hidr/o . . . . .	sweat	myos/o . . . . .	muscle
hist/o; histi/o . . . . .	tissue	narc/o . . . . .	stupor; numbness
home/o . . . . .	same; constant; unchanged	nas/o . . . . .	nose
hydr/o . . . . .	water	nat/i. . . . .	birth
hyper- . . . . .	above; increase	necr/o . . . . .	death
hypn/o . . . . .	sleep	neo- . . . . .	new
hypo- . . . . .	under; below	nephr/o . . . . .	kidney
hyster/o . . . . .	uterus; womb	neur/o . . . . .	nerve
immun/o . . . . .	safe; protection	ocul/o; ophthalm/o. . . . .	eye
in- . . . . .	not; in	odont/o . . . . .	tooth
infra- . . . . .	below; inferior	olig/o . . . . .	few; scanty
inter- . . . . .	between	onc/o . . . . .	mass; tumor
intra- . . . . .	within	or/o . . . . .	mouth
is/o . . . . .	same; equal	orth/o . . . . .	straight
kary/o . . . . .	nucleus	oste/o . . . . .	bone
kerat/o . . . . .	horny; hard; cornea	ot/o . . . . .	ear
kinesi/o. . . . .	movement	ov/o . . . . .	egg
labi/o. . . . .	lips	pachy/o. . . . .	heavy; thick
lacrim/o . . . . .	tear; tear duct	pan- . . . . .	all
lact/o . . . . .	milk	para- . . . . .	beside; near; abnormal
lapar/o . . . . .	abdomen	path/o . . . . .	disease
laryng/o . . . . .	larynx; voice box	per- . . . . .	through
later/o . . . . .	side	peri- . . . . .	around
leuk/o . . . . .	white	phag/o . . . . .	eat; swallow
lingu/o . . . . .	tongue	pharyng/o . . . . .	throat
lip/o. . . . .	fat	phil/o . . . . .	like; love; attraction to
lumb/o. . . . .	lower back; loins	phleb/o . . . . .	vein
macro- . . . . .	large	phob/o. . . . .	fear
mal- . . . . .	faulty; poor	phot/o. . . . .	light
mamm/o. . . . .	breast	physi/o . . . . .	nature
mast/o. . . . .	breast	pne/o . . . . .	breathing; breath
medi/o . . . . .	middle	pneum/o . . . . .	lung
melan/o . . . . .	black	poly- . . . . .	many; much
meso- . . . . .	middle	post- . . . . .	after; behind
meta- . . . . .	beyond; near; change	pre- . . . . .	before
metr/o; metri/o . . . . .	uterus	proct/o . . . . .	rectum
micr/o . . . . .	small	prot/o . . . . .	first
mit/o . . . . .	thread	proxim/o . . . . .	near

pseud/o . . . . . false  
 psych/o . . . . . mind  
 py/o . . . . . pus  
 pyr/o . . . . . heat; temperature  
 re- . . . . . back  
 rect/o . . . . . rectum  
 ren/o . . . . . kidney  
 retro- . . . . . behind  
 rhin/o . . . . . nose  
 rib/o . . . . . sugar  
 roentgen/o . . . . . x-rays  
 sarc/o . . . . . flesh (connective tissue)  
 scop/o . . . . . examination (usually visual)  
 semi- . . . . . half  
 seps/o . . . . . infection  
 somn/o . . . . . sleep  
 son/o . . . . . sound  
 spher/o . . . . . round; globe-shaped  
 sphygm/o . . . . . pulse  
 spondyl/o . . . . . vertebrae (backbones)  
 stomat/o . . . . . mouth  
 sub- . . . . . under; below  
 supra- . . . . . above  
 sym-; syn- . . . . . together; with  
 tachy- . . . . . fast  
 tele/o . . . . . far; distant  
 thorac/o . . . . . chest  
 top/o . . . . . position; location; place  
 tox/o; toxic/o . . . . . poison  
 trans- . . . . . across  
 ultra- . . . . . beyond; excess  
 vas/o . . . . . vessel; duct  
 ven/o . . . . . vein  
 ventr/o . . . . . belly side of body  
 vir/o . . . . . virus; poison  
 viscer/o . . . . . internal organs  
 vit/a; vit/o . . . . . life  
 xanth/o . . . . . yellow  
 xer/o . . . . . dry

**SUFFIXES**

-ac; -al; -ar; -ary . . . . . pertaining to  
 -algia . . . . . pain

-ase . . . . . enzyme  
 -asthenia . . . . . lack of strength  
 -blast . . . . . immature; embryonic  
 -capnia . . . . . carbon dioxide  
 -cele . . . . . tumor; hernia  
 -cidal . . . . . killing  
 -clast . . . . . break  
 -coccus (*pl.* -cocci) . . . . . berry-shaped  
 -crine . . . . . secrete; separate  
 -crit . . . . . separate  
 -cyte . . . . . cell  
 -cytosis . . . . . condition of cells  
 -desis . . . . . binding  
 -ectasia; -ectasis . . . . . dilation; stretching  
 -ectomy . . . . . removal of  
 -emesis . . . . . vomiting  
 -emia . . . . . blood  
 -er . . . . . one who  
 -esthesia . . . . . sensation  
 -genesis . . . . . condition of producing  
 -globin; -globulin . . . . . protein  
 -gram . . . . . record  
 -graph . . . . . instrument for recording  
 -graphy . . . . . process of recording  
 -ia . . . . . condition; process  
 -iasis . . . . . condition (of)  
 -ic . . . . . pertaining to  
 -ist . . . . . specialist  
 -itis . . . . . inflammation  
 -lith . . . . . stone; calculus  
 -lysis . . . . . destruction; break down  
 -lytic . . . . . destruction  
 -malacia . . . . . softening  
 -manometer . . . . . used to measure pressure  
 -megaly . . . . . enlargement  
 -meter . . . . . used to measure  
 -oid . . . . . resembling  
 -ole . . . . . little; small  
 -ology . . . . . study of  
 -oma . . . . . growth; tumor  
 -opia . . . . . vision  
 -opsy . . . . . view  
 -or . . . . . one who

-(-o)rraphy . . . . .	repair of	-ptosis . . . . .	drooping; falling
-(-o)rrhea . . . . .	flow; discharge	-rrhea . . . . .	discharge; flow
-osis . . . . .	condition (of)	-sclerosis . . . . .	hardening
-(-o)stomy . . . . .	creation of an opening	-scope . . . . .	instrument used to examine
-(-o)tomy . . . . .	cutting into	-scopy. . . . .	examination (usually visual)
-ous . . . . .	pertaining to	-spasm . . . . .	contraction of muscles
-para . . . . .	births (viable offspring)	-stalsis . . . . .	constriction
-pathy . . . . .	disease	-stasis . . . . .	control; stop
-penia . . . . .	decreased number	-static . . . . .	stopping; controlling
-phagia . . . . .	eating; swallowing	-stenosis . . . . .	tightening; stricture
-pheresis . . . . .	removal	-sthenia . . . . .	strength
-philia . . . . .	attraction for; increase	-therapy . . . . .	treatment
-phobia . . . . .	fear; dread	-thermy . . . . .	heat
-phonia . . . . .	voice; sound	-tic . . . . .	pertaining to
-phoria . . . . .	feeling (mental state)	-tome . . . . .	instrument to cut
-phylaxis . . . . .	protection	-tomy. . . . .	process of cutting; incision
-physis . . . . .	grow; growth	-tresia . . . . .	opening
-plasia . . . . .	formation; growth	-tropic; -trophy . . . . .	growth; nutrition
-plasty . . . . .	form; build up	-ule . . . . .	little; small
-plegia . . . . .	paralysis	-uric; -uria . . . . .	urine
-pnea . . . . .	breathing	-y . . . . .	condition; process
-porosis . . . . .	passage		



## APPENDIX IV

# COMMON PHARMACEUTICALS

	Pharmaceutical Name	Action & Use
<b>Astringents</b>	Aluminum acetate solution (Burrow's solution, Domeboro®)	Aluminum acetate solution is used as a wet dressing for the relief of inflammatory conditions of the skin, such as poison ivy, swellings and bruises, insect bites, athlete's foot, or other environmental skin conditions, and for superficial external otitis.
	Calamine, zinc oxide, glycerine, and bentonite magma in calcium hydroxide (calamine lotion)	Calamine lotion is used to treat various skin afflictions in the same way as aluminum acetate. It is a topical astringent and protectant. It should not be applied to blistered, raw, or oozing areas of the skin.
<b>Emollients</b>	Theobroma oil (cocoa butter)	Cocoa butter is an excellent emollient with a pleasant odor. It is ideal for the treatment of chapped skin and lips, cracked nipples, or minor irritated or abraded skin areas.
	Petrolatum (petroleum jelly)	Petrolatum is a good emollient that also provides a highly occlusive, protective barrier. When petrolatum is used as an ointment base, it may not release some drugs.
	Zinc oxide ointment	Zinc oxide ointment is a white petrolatum containing approximately 20% zinc oxide powder. It is used as an emollient with slightly astringent properties. Because of its opaqueness, zinc oxide ointment is ideal for protecting sensitive skin from the sun.
<b>Expectorants &amp; Antitussives</b>	Guaifenesin and dextromethorphan (Robitussin DM®)	In this drug combination, guaifenesin acts as an expectorant. It may be useful in the symptomatic relief of dry, nonproductive coughs, and in the presence of mucous in the respiratory tract. Dextromethorphan is a synthetic nonnarcotic derivative of codeine that acts as an antitussive. It is used to control nonproductive coughs by soothing minor throat and bronchial irritations.
	Guaifenesin and codeine phosphate (Robitussin AC®)	Guaifenesin and codeine phosphate are combined to relieve the symptoms of a cold. Guaifenesin is an expectorant, and codeine phosphate is a narcotic antitussive. Patients should be advised that this medication contains a narcotic and, if abused, could cause dependency.

HM3fAiva

	<b>Pharmaceutical Name</b>	<b>Action &amp; Use</b>
<b>Nasal Decongestants</b>	Pseudoephedrine hydrochloride (Sudafed®)	Pseudoephedrine hydrochloride (HCl) is indicated for the symptomatic relief of nasal congestion due to the common cold, hay fever, or other upper respiratory allergies.
	Pseudoephedrine hydrochloride and triprolidine hydrochloride (Actifed®)	Pseudoephedrine HCl and triprolidine HCl are a nasal decongestant and antihistamine combination. Pseudoephedrine HCl, a nasal decongestant, reduces congestion and swelling of mucous membranes, and triprolidine HCl, an antihistamine, promotes drying of mucous membranes. This drug combination is indicated for the symptomatic relief of colds, hay fever, etc.
	Phenylpropanolamine and guaifenesin (Entex®LA)	Phenylpropanolamine, a nasal decongestant, and guaifenesin, an expectorant, are combined for the symptomatic relief of nasal congestion due to the common cold, hay fever, or other respiratory allergies.
<b>Antihistamines</b>	Diphenhydramine hydrochloride (Benadryl®)	Diphenhydramine hydrochloride is given for active and prophylactic treatment of motion sickness, as a nighttime sleep aid, and for the symptomatic relief of urticaria, allergic rhinitis, and other allergic conditions.
	Chlorpheniramine maleate (Chlor-Trimeton®)	Chlorpheniramine maleate is used for the symptomatic treatment of urticaria and other allergic conditions.
	Meclizine hydrochloride (Antivert®, Bonine®)	Meclizine HCl is given to prevent and treat nausea, vomiting, and dizziness of motion sickness. Meclizine HCl has a longer duration of action than diphenhydramine hydrochloride.
	Dimenhydrinate (Dramamine®)	Similar to other antihistamines, the greatest usefulness of dimenhydrinate is the prevention and treatment of motion sickness. It may also be used to control nausea and vomiting in connection with radiation sickness.
<b>Histamine H<sub>2</sub> Receptor Antagonists</b>	Cimetidine (Tagamet®)	Cimetidine is used for short-term treatment and maintenance of active duodenal and benign gastric ulcers. Cimetidine may also be used for other medical conditions which cause an excess amount of gastric acid to be produced.
	Ranitidine (Zantac®)	Like cimetidine, ranitidine is used for short-term treatment and maintenance of active duodenal and benign gastric ulcers to promote healing of duodenal ulcers. In addition, ranitidine is used to treat gastroesophageal reflux disease.

HM3Aivb

	Pharmaceutical Name	Action & Use
Antacids	Magnesium hydroxide (Milk of Magnesia USP)	Milk of magnesia is used for the symptomatic relief of upset stomach associated with hyperacidity, treatment and maintenance of duodenal ulcers, and may be used to reduce phosphate absorption in patients with chronic renal failure. Magnesium hydroxide should be taken on an empty stomach with lots of fluids. It should not be used in the presence of abdominal pain, nausea, or vomiting. Prolonged use may result in kidney stones. Magnesium hydroxide also has a laxative effect.
	Aluminum hydroxide gel (Amphojel®)	Aluminum hydroxide gel is used to manage peptic ulcers, gastritis, and gastric hyperacidity. The major advantage of this drug is that no systemic alkalosis is produced. It may, however, cause constipation.
	Alumina and magnesia oral suspension (Maalox®)	Alumina and magnesia oral suspension coats the stomach lining and neutralizes gastric acid. It is less constipating than aluminum hydroxide alone.
	Alumina, magnesia, and simethicone oral suspension (Mylanta®)	Alumina, magnesia, and simethicone oral suspension coats the stomach lining, neutralizes gastric acid, and reduces flatulence.

Antiseptics, Disinfectants, & Germicides	Phenol (carbolic acid)	<p>Historically one of the first antiseptic agents used, phenol is the standard by which all other antiseptic, disinfectant, and germicidal agents are measured in their effectiveness. Because of its highly caustic nature, phenol must be handled with care. The effect of phenol is coincident with the concentration: high concentrations are germicidal and can cause tissue destruction; lower concentrations are antiseptic. Phenol is inactivated by alcohol. Because more effective and less damaging agents have been developed, phenol is no longer used extensively.</p> <p><b>NOTE:</b> Never use phenol to disinfect rubber, cloth, or plastic.</p>
	Povidone-iodine (Betadine®)	<p>Numerous iodine and iodine-complex agents are available for use in disinfection. The most common of these is povidone-iodine (Betadine®). It is used externally to destroy bacteria, fungi, viruses, protozoa, and yeasts. Povidone-iodine is relatively nontoxic, nonirritating, and nonsensitizing to the skin. When used as an antiseptic, the complex breaks down on contact with skin or mucous membranes to release free iodine, which is slowly absorbed. It is most commonly used as a preoperative skin antiseptic.</p> <p><b>NOTE:</b> Check for iodine allergies before using this antiseptic on patients.</p>

HM3FA1vc

	Pharmaceutical Name	Action & Use
Antiseptics, Disinfectants, & Germicides (cont.)	Isopropyl alcohol (Isopropanol)	Isopropyl alcohol is used in a 70% solution as a skin antiseptic; it is volatile and also has a drying effect on the skin.
	Hexachlorophene (pHisoHex®)	Hexachlorophene, a synthetic preparation is a bacteriostatic cleansing agent effective against gram-positive organisms. Pus or serum decrease its effectiveness. Hexachlorophene is a neurotoxic agent and must not be used on premature infants, denuded skin, burns, or mucous membranes. It is used as an antiseptic scrub by physicians, dentists, food handlers, and others. Residual amounts can be removed with alcohol.
	Glutaraldehyde (Cidex®)	Glutaraldehyde is effective against vegetative gram-positive, gram-negative, and acid-fast bacteria, bacterial spores, some fungi, and viruses. It is used in an aqueous solution for sterilization of fiber optics, plastics, rubber, and other materials that are not resistant to heat.
	Hydrogen peroxide	Hydrogen peroxide, a germicide, is routinely used to clean pus-producing wounds and in the treatment of necrotizing ulcerative gingivitis (NUG) (also known as trench mouth). Hydrogen peroxide is an oxidizing agent that is destructive to certain pathogenic organisms, but it is mild enough to be used on living tissue. It is for external use only and is normally available in a 3% solution.
	Silver nitrate	<p>The soluble salts of silver nitrate ionize in water to produce highly concentrated astringent and antiseptic solutions. Silver nitrate in <b>solid</b> form is most commonly used to cauterize mucous membranes and to treat aphthous ulcers. The most common side effect of silver nitrate is that the skin turns black where the silver nitrate comes in contact with it. This black area on the skin is not harmful but will resolve slowly. Silver nitrate in <b>liquid</b> form is used as eye drops to prevent gonorrheal ophthalmia in newborns. Liquid silver nitrate is also used as a wet dressing.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;"><b>CAUTION!</b></p> <p>When you use silver nitrate as a wet dressing, you should use precautions to keep the dressing from drying out. If the wet dressing dries out, the silver nitrate will precipitate and be absorbed into the skin, which will turn a slate gray. This condition is known as <b>argyria</b>. There is no known reversal for this condition.</p> </div>

HM3FAIvd

	Pharmaceutical Name	Action & Use
<b>Sulfonamides</b>	Sulfisoxazole (Gantrisin®)	This systemic sulfonamide is bacteriostatic and is indicated to treat urinary tract infections and acute otitis media.
	Trimethoprim and sulfamethoxazole (Bactrim®, Septra®)	The combination of trimethoprim and sulfamethoxazole is an anti-infective used to treat urinary tract infections and otitis media.
	Sulfacetamide sodium (Sodium Sulamyd®, Bleph-10®)	Sulfacetamide sodium is an ophthalmic bacteriostatic for the treatment of conjunctivitis, corneal ulcer, and other superficial ocular infections. It is available in solutions of various strengths and in an ointment form.
	Silver sulfadiazine (Silvadene Cream®)	Silver sulfadiazine is a topical antimicrobial agent used to treat second- and third-degree burns to prevent wound sepsis. It is water soluble and easily washed off the skin.

<b>Penicillins</b>	Penicillin G, aqueous	Penicillin G, aqueous, is indicated for susceptible infections such as meningococcal meningitis, endocarditis, and gonorrhea. Penicillin G is for parenteral use only.
	Penicillin G benzathine (Botulin®)	Penicillin G benzathine is indicated for conditions such as syphilis and upper respiratory tract infections caused by streptococcal (group A) bacteria.
	Penicillin G procaine, aqueous (Wycillin®)	Penicillin G procaine, aqueous, is indicated for conditions such as uncomplicated pneumonia, middle ear and sinus infections, NUG and pharyngitis, and acute pelvic inflammatory disease (PID). Penicillin G procaine is for parenteral use only, and it has a longer duration of action than most of the other penicillins.
	Penicillin V potassium (Pen-Vee K®, Betapen-VK®, V-Cillin K®)	Penicillin V is used to treat conditions such as upper respiratory tract infection, otitis media, sinusitis, bacterial endocarditis, and mild staphylococcal infection of skin and soft tissue. Penicillin V has the same spectra of activity of penicillin G and is usually the drug of choice for uncomplicated group-A beta-hemolytic streptococcal infections. It is available as oral tablets or powder for reconstitution for oral suspension.
	Dicloxacillin sodium (Dynapen®)	Dicloxacillin sodium is used to treat infections caused by penicillin G-resistant staphylococci. It may be used to initiate therapy in any patient in whom a staphylococcal infection is suspected.
	Ampicillin (Polycillin®)	Ampicillin is used to treat conditions such as shigella, salmonella, escherichia coli, and gonorrhea.
	Amoxicillin (Amoxil®)	The spectrum of amoxicillin is essentially identical to ampicillin, except that amoxicillin is more effective against shigella. Amoxicillin also has the advantage of more complete absorption than ampicillin.

HM3FAive

	Pharmaceutical Name	Action & Use
<b>Cephalosporins</b>	Cefazolin sodium (Ancef®, Kefzol®)	Cefazolin is used to treat a wide range of medical conditions, such as lower respiratory tract infections (pneumonia and lung abscess), septicemia, and bone and joint infections. Cefazolin sodium is also used perioperatively to reduce the chance of certain infections following surgical procedures (such as vaginal hysterectomy, gastrointestinal (GI) surgery, and transurethral prostatectomy).
	Cephalexin (Keflex®)	Cephalexin is indicated for the treatment of infection of the respiratory tract, otitis media, skin and skin structures, and genitourinary system.
	Cefuroxime (Ceftin®, Zinacef®)	Cefuroxime is used to treat pharyngitis, tonsillitis, otitis media, bronchitis, and mixed infections of the skin and skin structure. Mixed infections are infections that include both aerobic and anaerobic pathogenic organisms. This medication is also used preoperatively to prevent the incidence of certain postoperative infections.

<b>Tetracyclines</b>	Tetracycline hydrochloride (Achromycin®, Sumycin®)	Tetracycline hydrochloride (TCN) is used to treat infections caused by rickettsiae (such as Rocky Mountain spotted fever and typhus fever), agents of lymphogranulomas venereum and granuloma inguinale, and the spirochetal agent of relapsing fever. Tetracycline hydrochloride is indicated for severe acne as an adjunctive therapy. Food and some dairy products may interfere with absorption; antacids containing aluminum, calcium, or magnesium impair absorption of the antibiotic as well. This medication should be given 1 hour before or 2 hours after meals.
	Doxycycline hyclate (Vibramycin®)	Doxycycline is active against a wide range of gram-positive and gram-negative microorganisms and has a low affinity for binding with calcium. In addition to the conditions listed under tetracycline, doxycycline is also indicated for the treatment of uncomplicated chlamydial infections and uncomplicated gonococcal infections.
	Minocycline hydrochloride (Minocin®)	Minocycline hydrochloride is indicated for the same conditions as tetracycline hydrochloride and doxycycline hyclate.

HM3FAIV

	Pharmaceutical Name	Action & Use
Aminoglycosides	Streptomycin sulfate	Streptomycin sulfate is indicated for all forms of <i>mycobacterium tuberculosis</i> ; it should be used only in conjunction with other antituberculosis drugs, e.g., Rifampin® or isoniazid. Streptomycin sulfate is also used to treat plague, tularemia, chancroid, granuloma inguinale, and some urinary tract infections where the infectious agent has shown to be susceptible to streptomycin and not susceptible to less toxic preparations.
	Gentamicin sulfate (Garamycin®)	Gentamicin sulfate is used to treat serious systemic infections of susceptible gram-negative organisms. While the patient is on gentamicin sulfate, it is necessary to monitor renal and hepatic function to determine if toxic levels have been reached. Gentamicin sulfate is also available as a topical preparation for the treatment of burns and infected wounds, and as an ophthalmic preparation for eye infections.
	Tobramycin sulfate (Nebcin®)	Tobramycin sulfate is used to treat serious infections such as septicemia, meningitis, and peritonitis.
	Neomycin sulfate (Mycifradin Sulfate®)	Neomycin sulfate is used to a topical preparation to treat skin infections, burn wounds, ulcers, and dermatoses. Neomycin sulfate is given orally to reduce intestinal flora prior to surgery involving the bowel or anus.

Macrolides	Erythromycin (E-Mycin®, Ilotycin®, PCE Dispertab®, Eryc®)	Erythromycin is one of the drugs of choice when penicillin is contraindicated. This medication is indicated to treat medical conditions such as gonorrhoea; uncomplicated urethral, endocervical, and anal infections; early syphilis; and cases of severe or prolonged diarrhea associated with campylobacter enteritis and enterocolitis. Erythromycin is also prescribed, as a prophylactic agent, prior to colorectal surgery. Erythromycin is available in enteric-coated tablets, as an ophthalmic ointment, and as a topic preparation for the adjunctive treatment of acne.
	Clindamycin hydrochlorids (Cleocin®)	Clindamycin hydrochloride is used to treat susceptible anaerobic organisms. The use of clindamycin hydrochloride has often been associated with severe colitis and profuse diarrhea; if this condition occurs, the drug should be discontinued. A topical preparation is available for the treatment of acne.
	Vancomycin hydrochloride (Vancocin®)	Vancomycin hydrochloride is indicated in potentially life-threatening infections not treatable with other effective, less toxic antimicrobials, including the penicillins and cephalosporins. Potentially life-threatening infections that vancomycin may be used for include endocarditis, osteomyelitis, pneumonia, and septicemia.

HM3FAivg

	Pharmaceutical Name	Action & Use
Macrolides (cont.)	Spectinomycin (Trobicin®)	Spectinomycin was developed to treat gonorrhea. It is largely bacteriostatic and very effective in treating uncomplicated gonorrhea. Its advantage lies primarily in being a single-dose therapy and for patients who are allergic to penicillin or have penicillin-resistant strains of the causative organism. It is NOT effective in treating syphilis.

Antifungals	Nystatin (Mycostatin®)	Nystatin is primarily used to treat candidal infections. It is fungicidal and fungistatic against a wide variety of yeasts and yeast-like fungi, and is most often used to treat candidiasis. It is sometimes used concurrently with tetracycline to suppress the overgrowth of <i>Candida</i> in the bowel.
	Griseofulvin (Gris-PEG®, Fulvicin®)	Griseofulvin is a fungistatic agent given orally to treat fungal infections of the nails, hair, and skin. It is generally reserved for chronic infections that have not responded to topical therapy alone. Because treatment may last for several months, the patient should be instructed to follow the treatment regimen even though symptoms may abate. Inclusion of topical therapy is a must for effective elimination of the infection. Griseofulvin is not indicated to treat superficial fungal infections that can be controlled by topical antifungals. Because of its toxicity, patients should have periodic evaluations of hepatic and renal function. Griseofulvin is contraindicated in patients with hepatic dysfunction.
	Miconazole nitrate (Monistat®, Micatin®)	Miconazole nitrate is a synthetic antifungal that inhibits the growth of common dermatophytes. It is indicated to treat cutaneous fungal infections and vulvovaginal candidiasis.
	Undecylenic acid (Desenex®)	Undecylenic acid is used primarily to treat and prevent tinea pedis and is often compounded with zinc to act as an astringent. It is available in ointment, dusting powder, solution, and spray.
	Tolnaftate (Tinactin®, Aftate®)	Tolnaftate was the first fungicide synthesized. It is indicated for the topical treatment of tinea pedis, tinea corporis, tinea capitis, and tinea versicolor.
	Clotrimazole (Lotrimin®, Mycelex®)	This is a broad-spectrum antifungal that inhibits the growth of pathogenic dermatophytes, yeasts, and other types of fungus growth, including <i>Candida albicans</i> . It is indicated for the treatment of tinea pedis, tinea cruris, tinea corporis, and candidiasis.

HM3fAivh

	Pharmaceutical Name	Action & Use
Antiparasitics	Permethrin (Elimite®)	Permethrin is a pediculicide used to treat <i>Pediculosis capitis</i> (head lice) and <i>Phthirus pubis</i> (crab lice). It is also indicated for scabies. Use with caution, especially in infants, children, and pregnant women, since it penetrates human skin and has the potential for systemic poisoning. This drug is irritating to the eyes and should be discontinued immediately if local irritation occurs.
	Crotomiton (Eurax®)	Crotamiton is a scabicide indicated for the treatment of scabies ( <i>Sarcoptes scabiei</i> ); it also has an antipruritic effect. Keep away from the eyes and mouth; do not apply to inflamed skin.
	Metronidazole (Flagyl®)	Metronidazole is effective in treating amebiasis. It is also used as a trichomonacide.
	Chloroquine phosphate (Aralen®)	Chloroquine phosphate is the drug of choice in treating acute malarial attacks. It is also used in the prevention and suppression of malaria in endemic areas.
	Primaquine phosphate	Primaquine phosphate is the drug of choice for the prevention or relapse of malaria caused by <i>P. vivax</i> and <i>P. ovale</i> . Primaquine phosphate is contraindicated in G-6-PD-deficient personnel, as it may result in hemolytic anemia.
	Sulfadoxine and pyrimethamine (Fansidar®)	Sulfadoxine and pyrimethamine is used in the curative treatment of strains of malaria that are resistant to chloroquine phosphate. It is also used prophylactically in endemic areas.
	Mebendazole (Vermox®)	Mebendazole is effective in treating infestations of hookworm, roundworm, pinworm, and whipworm.
	Pyrantel pamoate (Antiminth®)	Pyrantel pamoate is regarded as the drug of choice for pinworm and roundworm infestations.
	Thiabendazole (Mintezol®)	Thiabendazole is a vermicide used to destroy pinworms, roundworms, threadworms, hookworms, and whipworms. It is not indicated as a prophylactic agent.

Laxatives	Mineral oil	Mineral oil is an emollient laxative used to lubricate the fecal mass. It is often used in combination with an irritant agent such as phenolphthalein (Ex-Lax®).
	Glycerin suppositories (Sani-Supp®)	Glycerin suppositories are widely used in children. They promote peristalsis through local irritation of the mucous membrane of the colon.
	Bisacodyl (Ducolax®)	Bisacodyl is a relatively nontoxic irritant cathartic that reflexively stimulates the colon on contact. It usually produces softly formed stools in 6 to 12 hours and is normally taken at bedtime. It is often used as a preparatory agent prior to some surgeries and radiological examinations.

HM3FAVI

	Pharmaceutical Name	Action & Use
<b>Laxatives (cont.)</b>	Magnesium citrate (Citrate of magnesia)	Magnesium citrate is a saline irritant laxative that also inhibits the absorption of water from the intestine. It is preferred by radiology departments for use prior to special x-rays.
	Psyllium hydrophilic mucilloid (Metamucil®)	Psyllium hydrophilic mucilloid is a bulk laxative that works by absorbing water. The effect occurs within 12 to 72 hours. It is provided as a dry powder that is stirred into water or fruit juice. This laxative should be drunk immediately after mixing, while the material is in suspension.
	Ducosate calcium (Surfak®)	Ducosate calcium is a stool softener that promotes water retention in the fecal mass.
	Ducosate sodium (Colace®)	Ducosate sodium has the same action as ducosate calcium.

<b>Antidiarrheals</b>	Kaolin mixture with pectin (Kaopectate®)	Kaolin mixture with pectin is used in the symptomatic treatment of diarrhea. The pectin portion absorbs excess fluid and consolidates the stool. The kaolin portion absorbs irritants and forms a protective coating on the intestinal mucosa.
	Diphenoxylate hydrochloride with atropine sulfate (Lomotil®)	Diphenoxylate hydrochloride with atropine sulfate is used for the symptomatic treatment of diarrhea. This medication reduces peristalsis and intestinal motility by affecting the smooth muscles in the intestine. Because diphenoxylate is chemically related to meperidine hydrochloride (Demerol®), it is classified as a controlled substance. To prevent abuse of the drug, a sub-therapeutic amount of atropine is added.

<b>Diuretics</b>	Hydrochlorothiazide (Esidrix®, Oretic®, HydroDIURIL®)	Hydrochlorothiazide is used for edema associated with congestive heart failure and other edematous conditions. It is also used to manage hypertension as the sole agent or in combination with other antihypertensive agents.
	Chlorthalidone (Hygroton®)	Chlorthalidone is used in the same manner as hydrochlorothiazide.
	Furosemide (Lasix®)	Furosemide, a potent diuretic, is used to treat edema associated with congestive heart failure, cirrhosis of the liver, and renal disease. It is particularly useful when greater diuretic potential is desired, and may be used alone or in combination with other antihypertensive agents to treat hypertension.
	Acetazolamide (Diamox®)	Although classified as a diuretic, the primary indication for this drug is the treatment of glaucoma (to reduce intraocular pressure).

HM3fAivj

	Pharmaceutical Name	Action & Use
Diuretics (cont.)	Triamterene and hydrochlorothiazide (Dyazide®, Maxzide®)	This combination of a potassium-sparing (triamterene) and potassium-depleting diuretic is often more effective than either drug alone. It is used for edema associated with congestive heart failure and other edematous conditions. It is also used in the management of hypertension.

Nonnarcotic Analgesics, Antipyretics, and Anti-inflammatory Agents	Aspirin (ASA, CAMA, Ecotrin®)	Aspirin is still the most economical analgesic, antipyretic, and anti-inflammatory agent available. Some preparations have an antacid-type buffer to assist in the reduction of gastric irritation. It is an analgesic for mild to moderate pain and an effective antipyretic. Aspirin is also indicated for various inflammatory conditions, such as rheumatoid arthritis and bursitis.
	Acetaminophen (Tylenol®)	Acetaminophen, an analgesic and antipyretic, is used to relieve pain and fever accompanying diseases (such as the common cold and influenza). It is also used to relieve pain and discomfort of upper GI disease (ulcer and gastritis), gouty arthritis, a variety of arthritic and rheumatic conditions involving musculoskeletal pain, as well as other painful disorders. Acetaminophen is indicated for patients who are allergic to aspirin.
	Ibuprofen (Motrin®)	Ibuprofen is indicated for the relief of mild to moderate pain, including headaches and menstrual cramps. It is also used as an anti-inflammatory agent to treat arthritis, tendinitis, bursitis, etc. It is not recommended for use in cases of gastrointestinal bleeding or renal impairment, or during the third trimester of pregnancy.
	Indomethacin (Indocin®)	Indomethacin is a potent anti-inflammatory agent with antipyretic and analgesic properties. Because of its potential for adverse reactions, indomethacin should be reserved for cases of chronic rheumatoid arthritis, osteoarthritis, and acute gout.
	Naproxen sodium (Anaprox®)	Naproxen sodium, an analgesic, is indicated for the relief of mild to moderate pain and for the treatment of primary dysmenorrhea, rheumatoid arthritis, osteoarthritis, tendinitis, bursitis, and acute gout. Its effects are similar to those of aspirin and indomethacin, but with fewer and less toxic gastrointestinal side effects; however, it is not indicated for patients with a history of gastrointestinal disease, especially those with a propensity for peptic ulcer disease.
	Tolmetin sodium (Tolectin®)	Tolmetin sodium, an anti-inflammatory agent, is used for treatment and long-term management of acute rheumatoid arthritis and osteoarthritis. It is also used to treat juvenile rheumatoid arthritis.
	Piroxicam (Feldene®)	Piroxicam, an anti-inflammatory agent, is used to relieve the signs and symptoms of acute and chronic osteoarthritis and rheumatoid arthritis.

HM3FAivk

	Pharmaceutical Name	Action & Use
Central Nervous System Stimulants	Methylphenidate hydrochloride (Ritalin®)	Methylphenidate HCl is indicated for use in hyperkinetic children and children with attention deficit disorders. In children, this drug as a central nervous system depressant. Methylphenidate HCl is also indicated for narcolepsy in adults.
	Dextroamphetamine sulfate (Dexadrine®)	Dextroamphetamine is primarily indicated for narcolepsy. However, because of dextroamphetamine's anorexiatic effect (it diminishes the appetite), it is occasionally used as an adjunct to diet therapy for obesity caused by overeating.

Central Nervous System Depressants	Phenobarbital (Luminal®)	Phenobarbital is a long-lasting barbiturate frequently used to treat convulsive seizure disorders. This is the drug of choice in petit mal epilepsy, and it is also used as a hypnotic or sedative.
	Pentobarbital (Nembutal®)	Pentobarbital is indicated for short-term treatment of insomnia. It is also used as a preanesthetic medication.
	Secobarbital (Seconal®)	Secobarbital is used in the same manner as pentobarbital and has a rapid hypnotic effect.
	Phenytoin sodium (Dilantin®)	Phenytoin sodium, a nonbarbiturate anticonvulsant, is the drug of choice for the treatment and management of grand mal epilepsy. Because phenytoin sodium possesses no hypnotic properties, it is preferred to phenobarbital in treating seizure disorders. However, phenytoin sodium and phenobarbital are frequently used in combination to more effectively manage certain types of epilepsies.
	Ethyl alcohol (ethanol)	Ethyl alcohol, a controlled substance, is mainly used in compounding various medicinal preparations not normally stocked by pharmacy. In small doses, alcohol stimulates the gastric mucosa, increasing the flow of juices. Continual small doses produce hypnotic effects. Systemically, ethyl alcohol is a sedative.

Opium & Opium Alkaloids	Camphorated opium tincture (Paregoric)	Camphorated opium tincture is used mainly as an intestinal tranquilizer to control diarrhea.
	Morphine sulfate	Morphine sulfate, an opium alkaloid, is indicated for the relief of severe pain. It is used preoperatively to sedate patients and to treat severe pain associated with myocardial infarction. Morphine is contraindicated for patients with head injuries, acute alcoholism, and convulsive disorders.

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	Pharmaceutical Name	Action & Use
Opium & Opium Alkaloids (cont.)	Codeine sulfate	Codeine sulfate, an opium alkaloid, is like morphine. However, it has only one-sixth of the analgesic power and one-fourth of the respiratory depressant effect of morphine. Codeine is used for moderate to severe pain and as an antitussive.
	Meperidine hydrochloride (Demerol®)	Meperidine hydrochloride is a synthetic analgesic similar to morphine. It is used for moderate to severe pain and as a preoperative medication. Meperidine HCl is not as effective as morphine in its analgesic properties.

Psychotherapeutic Agents	Chlorpromazine hydrochloride (Thorazine®)	Chlorpromazine hydrochloride is indicated for alleviating manifestations of psychosis, tension, and agitation. Dosage is highly individualized depending on the severity of symptoms and degree of response. Chlorpromazine HCl may also be used as an antiemetic.
	Thioridazine (Mellaril®)	Thioridazine is used for antipsychotic purposes and is considered to be a good all-around tranquilizer.
	Prochlorperizine (Compazine®)	Prochlorperizine is most often used in the symptomatic treatment of nausea and vomiting, but it shares all the antipsychotic effects of chlorpromazine.
	Haloperidol (Haldol®)	Haloperidol is indicated in treating schizophrenia with manifestations of acute manic symptoms, social withdrawal, paranoid behavior, and the manic stage of manic-depressive patients.
	Lithium (Eskalith®, Lithonate®)	Lithium is used to treat manic episodes of manic-depressive illness. It is the drug of choice to prevent or diminish the intensity of manic episodes.
	Amitriptyline hydrochloride (Elavil®)	Amitriptyline HCl is an antidepressive mood elevator with mild tranquilizing effects. It is indicated for the long-term treatment of depressive disorders.
	Chlordiazepoxide hydrochloride (Librium®)	Chlordiazepoxide hydrochloride is an antianxiety agent for the treatment of anxiety disorders. It is <b>not</b> indicated for the anxiety or tension associated with the stress of everyday activities. Chlordiazepoxide HCl is also indicated in the abatement of acute withdrawal symptoms of alcoholism.
	Hydroxyzine pamoate (Vistaril®, Atarax®)	Hydroxyzine pamoate is a rapid-acting antianxiety and antiemetic with antispasmodic and muscle relaxant effects. It is most often used in pre- and postoperative sedation and in conjunction with meperidine hydrochloride to enhance its effects and reduce nausea.

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	Pharmaceutical Name	Action & Use
Psychotherapeutic Agents (cont.)	Diazepam (Valium®)	Diazepam is useful in treating mild to moderate depression with anxiety and tension. Because of its muscle relaxant properties, it is also used to treat spastic muscle conditions and convulsive seizure episodes. Diazepam is the drug of choice in status epilepticus.
	Fluoxetine hydrochloride (Prozac®)	Fluoxetine is an oral antidepressant used to treat depression. It may also be useful in treating bulimia nervosa and obsessive-compulsive disorders.
	Temazepam (Restoril®)	Temazepam is a nonbarbiturate sedative and hypnotic indicated for the treatment of insomnia.

Skeletal Muscle Relaxants	Methocarbamol (Robaxin®)	Methocarbamol is used as an adjunct therapy for the relief of discomfort associated with acute, painful musculoskeletal conditions. It may have a beneficial effect in the control of neuromuscular manifestations of tetanus.
	Cyclobenzaprine hydrochloride (Flexeril®)	Cyclobenzaprine hydrochloride is indicated as an adjunct to rest and physical therapy for relief of muscle spasm with acute painful musculoskeletal conditions.
	Chlorzoxazone (Parafon Forte DSC®)	Chlorzoxazone is used in the same manner as cyclobenzaprine HCl.
	Orphenadrine citrate, aspirin, and caffeine (Norgesic®)	This drug combination contains a skeletal muscle relaxant (orphenadrine citrate), an analgesic and anti-inflammatory agent (aspirin), and a CNS stimulant (caffeine). It is used as an adjunct to rest and physical therapy for relief of muscle spasm with acute painful musculoskeletal conditions.

Cardiovascular Agents	Digoxin (Lanoxin®)	Digoxin is indicated for all degrees of congestive heart failure and for various arrhythmias. It has a direct effect on the myocardium, causing an increase in the force of contractions.
	Quinidine sulfate	Quinidine sulfate is indicated for premature atrial and ventricular contractions and other arrhythmias.  <b>NOTE:</b> Do not confuse this medication with quinine sulfate, an antimalarial.
	Amyl nitrite	Amyl nitrite is primarily used for the prevention of erection in adult males following circumcision. Occasionally, this drug is used for cardiac patients.
	Nitroglycerin (Nitrostat®, Nitro-Bid®)	Nitroglycerin is indicated for the treatment and management of acute and chronic angina pectoris.

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	Pharmaceutical Name	Action & Use
<b>Cardiovascular Agents (cont.)</b>	Isosorbide dinitrate (Isordil®, Sorbitrate®)	Isosorbide dinitrate is similar to nitroglycerin in its antianginal action.
	Dipyridamole (Persantine®)	Dipyridamole is indicated as an adjunct to warfarin sodium (an anticoagulant) in the prevention of postoperative thromboembolic complications of cardiac valve replacement.
	Procainamide hydrochloride (Pronestyl®, Procan SR®)	Procainamide HCl is indicated for the treatment of premature ventricular contractions, ventricular tachycardia, and atrial fibrillation. It may also be used for cardiac arrhythmias associated with anesthesia and surgery.
	Verapamil (Isoptin®)	Verapamil is indicated for the treatment of angina, essential hypertension (hypertension occurring without an organic cause found), and cardiac arrhythmias.
	Diltiazem (Cardizem®)	Diltiazem is indicated for the treatment of angina pectoris and for the management of essential hypertension.

<b>Vasoconstrictors</b>	Epinephrine (Adrenaline Chloride®, Sus-Phrine®)	When inhaled, epinephrine is used to relieve acute bronchial asthma. When injected, epinephrine relieves respiratory distress in bronchial asthma attacks and relieves bronchospasms in patients with chronic bronchitis, emphysema, and other obstructive pulmonary diseases. It may also be used to treat hypersensitivity reactions to drugs, serums, insect stings, or other allergens. (Symptoms of these reactions may include bronchospasms; urticaria; pruritus; and swelling of the skin, lips, eyelids, tongue, and nasal mucosa; and anaphylactic shock.)
	Tetrahydrozoline hydrochloride (Visine Eye Drops®)	Tetrahydrozoline HCl is an ophthalmic preparation for the symptomatic relief of irritated eyes.
	Phenylephrine hydrochloride (Neo-Synephrine®)	Phenylephrine hydrochloride is used to shrink mucous membranes of the nose and to relieve local congestion.
	Oxymetazoline hydrochloride (Afrin®)	Oxymetazoline HCl is a topical vasoconstrictor used to relieve nasal congestion.

<b>Anticoagulants</b>	Heparin sodium	Heparin sodium is used in prophylaxis and treatment of venous thrombosis (and its expansion) and of pulmonary embolism.
	Warfarin sodium (Coumadin®)	Warfarin sodium is used extensively to treat embolism in the prevention of occlusions.

HM3FAIVO

	Pharmaceutical Name	Action & Use
<b>Vitamins</b>	Vitamin A (Retinol)	Vitamin A, a fat-soluble vitamin, is necessary for visual adaptation to darkness. Deficiencies rarely occur in well-nourished individuals, and an excess of vitamin A can be toxic. Conditions which may cause vitamin A deficiency include biliary tract or pancreatic disease, colitis, hepatic cirrhosis, and extreme dietary inadequacy (such as anorexia). Retinoic acid, a degradation product of retinol, is useful to treat acne and pseudofolliculitis barbae.
	Vitamin B <sub>1</sub> (Thiamine hydrochloride)	Vitamin B <sub>1</sub> , a water-soluble vitamin, is necessary for carbohydrate metabolism. This vitamin is used to treat patients with appetite loss resulting from dietary disturbances. The deficiency disease is beriberi.
	Vitamin B <sub>2</sub> (Riboflavin)	Vitamin B <sub>2</sub> , a water-soluble vitamin, functions in the body as a coenzyme necessary in tissue respiratory processes, e.g., oxidation reduction reactions. Deficiency is associated with cheilosis, glossitis, visual disturbances, or visual fatigue.
	Vitamin B <sub>3</sub> (Niacin)	Vitamin B <sub>3</sub> , a water-soluble vitamin, is indicated for the correction of a niacin deficiency and in the prevention and treatment of pellagra.
	Vitamin B <sub>6</sub> (Pyridoxine hydrochloride)	Vitamin B <sub>6</sub> , a water-soluble vitamin, is a coenzyme in the metabolism of protein, carbohydrate, and fat. It is most often used during isoniazid (INH) therapy to prevent the development of peripheral neuritis.
	Vitamin B <sub>12</sub> (Cyanocobalamin)	Vitamin B <sub>12</sub> , a water-soluble vitamin, is essential to growth, cell reproduction, and blood cell formation. When vitamin B <sub>12</sub> therapy is used to treat pernicious anemia, the treatment is continued indefinitely, and folic acid is normally included in the therapy protocol.
	Vitamin C (Ascorbic acid)	Vitamin C, a water-soluble vitamin, is necessary for the prevention and cure of scurvy. Vitamin C in high doses is believed to prevent the common cold, and to treat asthma, atherosclerosis, wounds, schizophrenia, and cancer.
	Vitamin D	Vitamin D, a fat-soluble vitamin, is involved in the regulation of calcium and phosphorus metabolism. Vitamin D deficiency leads to rickets in children and osteomalacia in adults.
	Vitamin E (Tocopherol)	Vitamin E, a fat-soluble vitamin, is an antioxidant that prevents the destruction of red blood cells by preventing fatty acids in the red blood cells from taking on too much oxygen. It stimulates the production of an enzyme necessary to cell respiration and protects the cell membrane.
	Vitamin K	The naturally occurring form of vitamin K is fat soluble. However, many of the synthetic forms of vitamin K are water soluble. Vitamin K is involved in the formation of prothrombin and other blood clotting factors. Deficiency results in an increase in blood-clotting time.

HM3FAIvp

	Pharmaceutical Name	Action & Use
<b>General &amp; Local Anesthetics</b>	Nitrous oxide	<p>Nitrous oxide, commonly called laughing gas, is used with oxygen in general anesthesia. Nitrous oxide may produce a condition during which the patient may laugh and become quite talkative. It is commonly used in dentistry or as a preinduction agent to other general anesthetics.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><b>CAUTION!</b></p> <p style="text-align: center;">High concentrations of nitrous oxide may cause cyanosis and asphyxia.</p> </div>
	Halothane (Fluothane®)	<p>Halothane can be used for inhalation anesthesia in most operative procedures with patients of all ages. It is nonflammable and nonexplosive. Halothane is contraindicated in obstetrics or in patients with hepatic dysfunction.</p>
	Ketamine hydrochloride (Ketalar®)	<p>Ketamine hydrochloride is a fast-acting general anesthetic agent used as a preinduction agent or for procedures that do not require skeletal muscle relaxation. One significant effect of this agent is that when the patient begins to recover from the drug, they might experience psychological manifestations ranging from pleasant dream-like states to hallucinations to delirium accompanied by confusion and irrational behavior. The effects of these manifestations may be minimized by keeping aural and tactile stimuli to a minimum. Ketamine HCl is contraindicated for patients with hypertensive disease.</p>
	Fentanyl and droperidol (Innovar®)	<p>Fentanyl and droperidol is a combination of a narcotic (fentanyl) and a tranquilizers (droperidol). Because of the self-potentiating combination, it must be used with extreme caution in patients with any respiratory problems.</p>
	Procaine hydrochloride (Novocain®)	<p>Administered only by injection, procaine hydrochloride may be used for many types of anesthesia, including spinal anesthesia. It is available in various solutions for injection.</p>
	Lidocaine hydrochloride (Xylocaine®)	<p>Lidocaine HCl is the standard to which all other anesthetics are compared. Lidocaine HCl may be combined with epinephrine for vasoconstrictive effects. Lidocaine is also used to treat myocardial infarctions to prevent or suppress preventricular contractions.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><b>CAUTION!</b></p> <p style="text-align: center;">Total dosage injected in 24 hours should not exceed 0.05 g per patient when used with epinephrine.</p> </div>

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	<b>Pharmaceutical Name</b>	<b>Action &amp; Use</b>
<b>General &amp; Local Anesthetics (cont.)</b>	Dibucaine (Nupercainal®)	Dibucaine is used as a topical local anesthetic on mucous membranes and may also be administered parenterally.
	Proparacaine (Ophthetic®, Ophthaine®)	This is a local ophthalmic anesthetic used topically. It is suited for almost every ophthalmic procedure. Proparacaine is fairly long lasting.
<b>Oxytocics</b>	Ergonovine maleate (Ergotrate Maleate®)	Ergonovine maleate is used in the prevention and treatment of postpartum and postabortal hemorrhage.
	Oxytocin (Pitocin®)	Oxytocin is indicated for the initiation or improvement of uterine contractions or to control postpartum hemorrhage.

HM3FAivr

## APPENDIX V

# GLOSSARY

*The following terms are explained as used in this manual and as commonly defined.*

- ABDUCTION**—Moving an extremity away from the body.
- ABRASION**—An area of skin or mucous membrane worn from the body mechanically by some unusual or abnormal process.
- ABSCESS**—A localized collection of pus.
- ACIDOSIS**—A condition resulting from acid accumulating in the body.
- ADDUCTION**—Bringing an extremity toward the body.
- ADIPOSE**—Of a fatty nature.
- ADRENERGIC**—Activated by, characteristic of, or secreting epinephrine or similar substance.
- ABSORBENT**—A drug which “takes up” other substances by absorption.
- ADSORPTION**—The attachment of one substance to the surface of another.
- AEROBIC**—Growing only in the presence of oxygen.
- AFFECT**—(*n.*) Feeling experienced in connection with an emotion.
- ALBUMINURIA**—Albumin in the urine.
- ALIMENTARY**—Pertaining to food or digestion.
- ALKALOSIS**—A pathogenic condition resulting from accumulation of base in, or loss of acid from, the body.
- AMBULATORY**—Walking or able to walk.
- ANABOLISM**—The constructive process by which the simple products of digestion are converted by living cells into more complex compounds and living matter for cellular growth and repair.
- ANAEROBIC**—Growing only in the absence of oxygen.
- ANALGESIC**—A drug used to relieve pain without producing unconsciousness or impairing mental capacities.
- ANATOMY**—The science of the structure of the body and the relationship of its parts to each other.
- ANEMIA**—A decrease in certain elements of the blood, especially red cells and hemoglobin.
- ANESTHESIOLOGIST**—A physician who specializes in anesthesiology.
- ANESTHESIOLOGY**—A branch of medicine that studies anesthesia and anesthetics.
- ANESTHETIST**—A registered nurse trained in administering anesthetics.
- ANISOCORIA**—Unequal diameter of the pupils.
- ANODYNE**—A drug that relieves pain.
- ANOREXIA**—Loss of appetite.
- ANTHELMINTIC**—A drug that expels, paralyzes, or kills intestinal worms.

**ANTIBIOTIC**—A synthetic product or a product of living microorganisms that kills or inhibits the growth of undesirable microorganisms.

**ANTIDOTE**—An agent that counteracts a poison.

**ANTIGEN**—A substance which, under certain conditions, is capable of inducing the formation of antibodies and reacting specifically with the antibodies in a detectable manner.

**ANTIPYRETIC**—A drug that lowers elevated body temperature.

**ANTISEPTIC**—A drug or chemical that inhibits the growth of microorganisms without necessarily destroying them.

**APNEA**—A temporary cessation of breathing.

**ARTICULATION**—The place of union or junction between two or more bones of the skeleton.

**ASEPTIC**—Clean; free of pathogenic organisms.

**ASTRINGENT**—A drug or preparation that produces shrinkage of body membranes, especially mucous membranes.

**ASYMPTOMATIC**—Having no symptoms.

**AUSCULTATION**—The act of listening for sounds within the body, with or without a stethoscope.

**AUTOLYSIS**—The spontaneous disintegration of tissues or cells by the action of their own serum or enzymes, such as occurs after death and in some pathological conditions.

**AVULSED**—A forcible separation; also, a part torn from another.

**AXILLARY**—Pertaining to the area of the armpit.

**BACTERICIDE**—An agent that destroys bacteria.

**BACTERIOSTATIC**—An agent that inhibits the growth of bacteria.

**BIOLOGICALS**—Medicinal preparations made from living organisms and their products, including serums, vaccines, antigens, and antitoxins.

**BLANCHING**—Turning white.

**BLEB**—Blister, bubble.

**BRADYCARDIA**—Abnormally slow heartbeat, evidenced by a pulse rate of 60 or less.

**BRADYPNEA**—Abnormally slow breathing.

**BUBO**—An inflamed swelling of a lymphatic gland, especially in the area of the armpit or groin.

**BUCCAL**—Referring to the cheek.

**CARRIER**—A person or animal that harbors specific infectious agents in the absence of discernible clinical disease, and serves as a potential source of infection for humans.

**CASTS**—Urinary sediments formed by coagulation of albuminous material in the kidney tubules.

**CATABOLISM**—A destructive process in which the complex compounds of the digestive process are reduced to more simple substances.

**CATHARTICS**—Drugs that promote bowel movement.

**CERVICAL**—Pertaining to the neck or the neck of any organ or structure.

**CHEYNE-STOKES**—Breathing characterized by alternating periods of apnea and deep respirations.

**COAGULATION**—Clotting.

**COAPTATION**—To fit together, as the edges of a wound or the ends of a fractured bone; category of splint.

**COCCYX**—Tailbone.

**COLATION**—The process of straining or filtration.

**COMMUNICABLE**—Capable of being transmitted from one person to another.

**COMMUNICABLE PERIOD**—The period of time in which an infectious agent may be passed from an infected animal or man to a receptive host. There may be more than one such period of time during the course of disease.

**COMMUNITION**—The process of physical reduction of a substance to fine particle size.

**CONTACT**—A person or animal known to have been associated with an infected person or animal, or a contaminated environment, and to have had the opportunity to acquire the infection.

**CONTAMINATION**—The presence of an infectious agent or toxin on the surface of a body or inanimate article, such as clothing, dishes, surgical dressings or instruments, as well as in food or water.

**CONTRACTURE**—A condition of muscle shortening and fibrous tissue development that results in a permanent joint deformity.

**CONTUSION**—A bruise.

**CORROSIVE**—A substance that rapidly destroys or decomposes body tissue at point of contact.

**CREPITUS**—The cracking or grating sound produced by fragments of fractured bones rubbing together.

**DEBILITY**—The state of abnormal bodily weakness.

**DEBRIDEMENT**—The removal of all foreign matter and devitalized tissue in or about a wound.

**DECANTATION**—Separating liquids from solids by letting the solids settle to the bottom and pouring off the liquid.

**DECEREBRATE**—A person with brain damage that produces certain abnormal neurologic signs.

**DECORTICATION**—Removing portions of the cortical substance of a structure or organ, such as the brain, kidney, or lung.

**DECUBITUS ULCER**—Bed or pressure sore.

**DESQUAMATE**—To shed, peel, or scale off.

**DIASTOLE**—The dilation or period of dilation of the heart, especially of the ventricles.

**DIATHERMY**—The generation of heat in tissue by electric current for medical or surgical purposes.

**DISINFECTION**—The killing of infectious agents outside the body by physical or chemical means applied directly.

**concurrent**—Done during the treatment of a patient with a communicable disease.

**terminal**—Done after a patient has been discharged or transferred.

**DISINFESTATION**—A physical or chemical means of destroying animal or insect pests in a particular area.

**DISTILLATION**—Converting a liquid to a vapor by applying heat and condensing the vapor back to liquid by cooling.

**DIURESIS**—Urine excretion in excess of the usual amount.

**DIURETICS**—Drugs that increase the secretion of urine.

**DYSPNEA**—Labored or difficult breathing.

**ECCHYMOSIS**—A small hemorrhagic spot, larger than a petechia, in the skin or mucous membrane, forming a nonelevated, rounded or irregular, blue or purplish patch.

**ELECTROLYTE**—A substance that dissociates into ions in solution or when fused, thereby becoming capable of conducting electricity.

**ELIXIR**—An aromatic, sweetened, hydroalcoholic solution containing medicinal substances.

**EMBOLUS**—A clot or other plug brought by the blood from another vessel and forced into a smaller one, thereby obstructing circulation.

**EMETIC**—A substance that causes vomiting.

**EMOLLIENT**—A drug that softens, soothes, or smooths the skin or irritated surfaces.

**EMULSION**—A liquid preparation containing two unmixable liquids, such as oil and water, one of which is dispersed as globules in the other.

**ENCAPSULATED**—Enclosed within a capsule.

**ENDEMIC**—The constant presence of a disease in a given locality.

**ENTERIC**—Of or within the intestine.

**EPIDEMIC**—The outbreak of disease in a geographic area in excess of normal expectations.

**EPIDEMIOLOGY**—The study of epidemics and epidemic diseases.

**EPISTAXIS**—Nosebleed.

**EPIZOOTIC**—Attacking many animals in a region at the same time.

**ERADICATE**—Wipe out; destroy.

**ERYTHEMA**—Redness.

**ERYTHROCYTE**—Red blood cell.

**EUPNEA**—Ordinary, quiet breathing.

**EUTAXIA**—The liquification of solids mixed in a dry state.

**EXSANGUINATION**—Extensive loss of blood due to hemorrhage, either internal or external.

**EXTENSION**—Straightening or unbending, as in straightening the forearm, leg, or fingers.

**EXTRAVASATION**—A discharge or escape, such as blood from a vessel into the tissue.

**EXTRICATION**—The process of freeing a victim, such as from a wrecked car or flooded compartment.

**FLEXION**—Bending, as in bending an arm or leg.

**FOMITE**—An object, such as a book, wooden object, or an article of clothing, that is not in itself harmful, but is able to harbor pathogenic microorganisms and thus may serve as an agent of transmission of an infection.

**FUMIGATION**—The destruction of disease-producing animals or insects by gaseous agents.

**FUNGICIDE**—A drug that kills fungus.

**FURUNCLE**—An abscess in the true skin caused by the entry of microorganisms through a hair follicle or sweat gland.

**FUSION**—Melting.

**GASTROSTOMY**—A surgical opening from the external surface of the body into the stomach, usually for inserting a feeding tube.

**GAVAGE**—Introducing a substance into the stomach through a tube.

**GERMICIDE**—An agent that kills germs.

**GESTATION**—The period of carrying developing offspring in the uterus after conception.

**GLYCOSURIA**—Glucose in the urine.

**GRAM-NEGATIVE**—A microorganism that does not retain Gram's crystal violet and is stained by the counterstain.

**GRAM-POSITIVE**—A microorganism that is stained by Gram's crystal violet.

**HEMACYTOMETER**—An instrument for estimating the number of blood cells in a measured volume of blood.

**HEMATEMESIS**—Vomiting bright red blood.

**HEMATOCRIT**—A determination of the volume percentage of red blood cells in whole blood.

**HEMIPLEGIA**—Loss of motion and sensation of one side of the body.

**HEMOGLOBIN**—Iron containing red pigment (heme) combined with a protein substance (globin).

**HEMOLYSIN**—Substance that breaks down red blood cells, thereby liberating hemoglobin.

**HEMOPTYSIS**—Coughing up bright red blood.

**HEMOSTATICS**—Drugs that control external bleeding by forming an artificial clot.

**HISTOLOGY**—The microscopic study of tissue structure.

**HOST**—A man or other living animal affording subsistence or lodgment to an infectious agent under natural conditions.

**HYDROTHERAPY**—The scientific use of water in the treatment of disease.

**HYPERGLYCEMIA**—Abnormally increased content of sugar in the blood.

**HYPERPNEA**—Increased rate and depth of breathing.

**HYPERTENSION**—High blood pressure.

**HYPERTHERMIA**—Abnormally high body temperature, especially that induced for therapeutic purposes.

**HYPOGLYCEMIA**—Low blood sugar.

**HYPOPNEA**—Abnormal shallowness and rapidity of breathing.

**HYPOSTASIS**—Poor or stagnant circulation in a dependent part of the body or organ, as in venous insufficiency.

**HYPOTENSION**—Low blood pressure.

**HYPOTHERMIA**—Abnormally low body temperature.

**HYPOVOLEMIA**—Abnormally decreased volume of circulating fluid (plasma) in the body.

**HYPOXIA**—Low oxygen content or tension; deficiency of oxygen in the inspired air.

**IMMISCIBLE**—Incapable of being mixed.

**IMMUNE PERSON**—An individual who does not develop clinical illness when exposed to specific infectious agents of a disease, due to the presence of specific antibodies or cellular immunity.

**IMMUNITY**—A defense mechanism of the body which renders it resistant to certain organisms.

**INAPPARENT INFECTION**—An infection with no detectable clinical symptoms, even though the causative infectious agent may be identifiable with laboratory examinations. It is also known as an asymptomatic or subclinical infection.

**INCIDENCE RATE**—The number of specific disease cases diagnosed and reported in a specific population in a defined period of time. It is usually expressed as cases per 1,000 or 100,000 annually.

**INCISION**—A cut, or a wound produced by cutting with a sharp instrument.

**INCOMPATIBLE**—Not suitable for combination or simultaneous administration.

**INCONTINENT**—Unable to control excretory functions.

**INCUBATION PERIOD**—The period of time between the initial exposure to an infectious agent and the first clinical symptoms of the disease.

**INDURATION**—An abnormally hard spot or place.

**INFECTIOUS AGENT**—An organism capable of producing infection or disease.

**INFECTIOUS DISEASE**—A disease of man and animal resulting from an infection.

**INFESTATION**—The establishment and multiplication of small animals or arthropods (especially insects and rodents) on the body, clothing, or habitat of individuals or animals.

**INGUINAL**—Pertaining to the abdomen.

**INSTRUCTION**—A directive containing authority or information having continued reference value or requiring continuing action.

**INTEGUMENTARY (SYSTEM)**—The skin and its accessory structures, including hair and nails.

**INTRADERMAL**—Into the dermis.

**INUNCTION**—Rubbing in.

**ISCHEMIA**—The lack of blood supply to specific areas due to constriction or obstruction in the blood vessels.

**ISOLATION**—Procedures taken to separate infected persons or animals, dispose of their secretions, and disinfect or sterilize the supplies, equipment, utensils, etc., used for their care, in order to prevent the spread of disease to susceptible persons or animals. Different procedures may be required for the specific infectious agent involved.

**ISOTONIC**—A solution having the same salinity as whole blood.

**KERATOLYTIC**—Removes horny layers of epidermis.

**LACERATED**—Torn.

**LACERATION**—A wound made by tearing and resulting in jagged edges.

**LACRIMATION**—The secretion of tears.

**LACRIMATORS**—Tear gases.

**LACTATION**—The production of milk.

**LATENT**—Concealed; not manifest; potential.

**LAVAGE**—The irrigation or washing out of an organ (such as the stomach or bowel).

**LESION**—Any pathological or traumatic discontinuity of tissue or loss of function of a part.

**LEUKOCYTE**—White blood cell.

**LEUKOCYTOSIS**—Abnormally high white blood cell count.

**LEUKOPENIA**—Abnormally low white blood cell count.

**LEVIGATION**—Adding a small amount of liquid to a mortar and pestle while triturating.

**LIGAMENT**—A sheet or band of tough, fibrous tissue connecting two or more bones or cartilages, or supporting an organ, fascia, or muscle.

**LINIMENT**—Solution or mixture of various substances in oily, alcoholic, or emulsified form, intended for external application.

**LUMBAR**—Pertaining to the part of the back between the thorax and the pelvis.

**LYOPHILIZATION**—The creation of a stable preparation of a biological substance (blood plasma, serum, etc.) by rapid freezing and dehydration of the frozen product under high vacuum.

**MACERATION**—Softening of a solid by soaking.

**MAGMAS**—Thick, creamy, aqueous suspensions of inorganic substances in a very fine state.

**MALAISE**—A vague feeling of bodily discomfort.

**MASTICATION**—Chewing.

**MEDICAL ASEPTIC TECHNIQUE**—The practice that prevents the spread of pathogens from person to person, place to place, or place to person.

**MELENA**—Excretion of black tarry stools.

**METABOLISM**—The sum of all the physical and chemical processes by which living organized substance is produced and maintained. Also, the transformation by which energy is made available to the organism.

**METAMORPHOSIS**—Change of shape or structure, particularly a transition from one development stage to another, as from larva to adult form.

**METROLOGY**—The science of weights and measures.

**MICROORGANISM**—A minute, living organism invisible to the naked eye.

**MICTURATION**—Voiding; urinating.

**MORBIDITY RATE**—An incidence rate that includes all persons in a particular population who become ill during a specific period of time.

**MORPHOLOGY**—The science of forms and structure of organized beings.

**MORTALITY RATE**—The number of deaths, reported in a particular population, over a specific period of time, divided by the total population, reported as deaths per 1,000 population. If the deaths are from one cause, then it is known as a disease-specific mortality rate.

**MOTTLED**—Marked with blotches or spots of different colors or shades.

**MUCUS**—A sticky substance secreted by mucous membranes.

**MYDRIATIC**—Any drug that dilates the pupil.

**MYELIN**—A lipid substance that forms a sheath around certain nerve fibers.

**MYELINATED**—Covered with a myelin sheath.

**NECROSIS**—The death of tissue, usually in small, localized areas.

**NOSOCOMIAL**—Originating in a hospital.

**NOTICE**—A directive of a one-time or limited nature that has a self-canceling provision and the same force or effect as an instruction.

**NUTRITION**—The total process of providing the body with nutriments, and assimilating and using them.

**OINTMENT**—A semisolid, fatty, or oily preparation of medicinal substances for external application.

**OLFACTORY**—Pertaining to the sense of smell.

**OLIGEMIA**—Deficiency in the volume of blood.

**OPHTHALMIC**—Pertaining to the eye.

**ORGANISM**—Any living thing.

**OSMOSIS**—The diffusion of fluids through a membrane or porous partition.

**OSSIFICATION**—Changing or developing into bone.

**OXIDATION**—The union of a substance with oxygen.

**PALPABLE**—Capable of being touched or felt.

**PALPITATION**—An abnormal, rapid, regular or irregular beating of the heart, felt by the patient.

**PARAPLEGIA**—Loss of motion and sensation of the lower half of the body.

**PARASITICIDES**—Drugs that kill parasites.

**PARENTERAL**—Administration of drugs by injection.

**PARESIS**—Slight or partial paralysis.

**PAROXYSM**—A sudden attack, or intensification of the symptoms of a disease, usually recurring periodically.

**PATHOGEN**—An organism capable of producing disease or causing infections.

**PATHOGENICITY**—The capability of an infectious agent to cause disease in a susceptible host.

**PERCUSSION**—The act of striking a body part with short, sharp blows as an aid in diagnosing the condition by evaluating the sound obtained.

**PERIPHERAL**—Outward part or surface.

**PERSISTENT**—Stubborn; persevering.

**PETECHIA**—(*pl.* petechiae) A round pinpoint, nonraised, purplish red spot caused by hemorrhage in the skin.

**pH**—Scale measuring the acidity or alkalinity of a solution.

**PHAGOCYTOSIS**—The ingestion and destruction by phagocytes of cells, microorganisms, and other foreign matter in the blood or tissue.

**PHARMACOGNOSY**—The study of the action of drugs and their uses.

**PHYSIOLOGICAL**—Characteristic of or appropriate to an organism's functioning.

**PLEXUS**—Network.

**PRECIPITATION**—The quality or state of being separated from solution or suspension by chemical or physical change, usually as an insoluble amorphous or crystalline solid.

**PRONE**—Lying face down.

**PROPHYLACTIC**—The prevention of disease; preventive treatment.

**PROPORTION**—Two equal ratios considered simultaneously.

**PROSTRATION**—Utter exhaustion.

**PRURITIS**—Intense itching.

**PSYCHOLOGICAL**—Belonging to or of the nature of psychology; the mental process.

**PURULENT**—Pus filled or containing pus.

**PUSTULE**—A small, inflamed elevation of the skin containing pus.

**QUADRAPLEGIA**—Loss of motion and sensation below the neck.

**RALES**—An abnormal sound, either moist or dry, classified by location (e.g., bronchial rales, laryngeal rales).

**RATIO**—The relationship of one quantity to another of like units.

**RESERVOIR**—A carrier on which an infectious agent depends primarily for survival.

**RESISTANCE**—The sum total of body mechanisms that provide barriers to the invasion of infectious agents or their toxic products.

**RHINORRHEA**—The free discharge of a thin nasal mucus.

**RHONCHUS**—(*pl. rhoncii*) A rattling throat sound due to partial obstruction; a dry coarse rale in the bronchial tubes.

**SACRUM**—Triangular bone just below the lumbar vertebrae.

**SANITIZATION**—The process of cleaning with soap and water or boiling to reduce the number of organisms to a safe level.

**SEPSIS**—The growth of pathogens in living tissue.

**SERUM**—(*pl. serums or sera*) The watery portion of an animal fluid remaining after coagulation; plasma minus the clotting proteins and clotting cells.

**SHOCK**—Collapse of the cardiovascular system, characterized by circulatory deficiency and depression of vital functions.

**SOLUBILITY**—The ability of a solid to dissolve in a given amount of solvent.

**SPIRITS**—Alcoholic or hydroalcoholic solutions of volatile substances.

**SPORE**—A microorganism in a resting or dormant state that renders it highly resistant to destruction.

**SPRAIN**—Injury to the ligaments and soft tissues that support a joint.

**STERILE**—Free of all living organisms.

**STERILIZATION**—The process of destroying all organisms on a substance or article by exposure to physical or chemical agents; the process by which all organisms, including spores, are destroyed.

**STERNUNTATORS**—Vomiting agents.

**STERTOROUS**—Snoring-type breathing sound.

**STRAIN**—Forcible overstretching or tearing of a muscle or tendon.

**STRIATED**—Striped or streaked.

**STRIDOR**—A harsh, high-pitched respiratory sound such as the inspiratory sound often heard in acute laryngeal obstruction.

**SUBCUTANEOUS**—Under the skin.

**SUBLINGUAL**—Under the tongue.

**SUPERFICIAL**—Of or pertaining to the surface, lying on, not penetrating below.

**SUPINE**—Lying on the back.

**SURGICAL ASEPTIC TECHNIQUE**—The practice that renders and keeps objects and areas free from all organisms.

**SURGICALLY CLEAN**—Clean but not sterile.

**SUSCEPTIBLE**—Not resistant. A person or animal who may acquire an infection or disease when exposed to a specific agent, because his or her resistance to the agent is lacking or reduced.

**SUSPECT**—A person who may have acquired a communicable disease; it is indicated by the medical history and clinical presentation.

**SUSPENSION**—A coarse dispersion of finely divided insoluble material suspended in a liquid medium.

**SYNCOPE**—Faintness or actual fainting.

**SYNERGIST**—A medicine that aids or cooperates with another.

**SYRUP**—Concentrated aqueous solutions of sucrose, containing flavoring or medicinal substances.

**TACHYCARDIA**—Excessively rapid heart beat, usually over 100.

**TAENIAFUGE**—A drug that expels tapeworms without necessarily killing them.

**TENDON**—A fibrous cord by which a muscle is attached to the skeleton.

**THORACIC**—Pertaining to or affecting the chest.

**THROMBUS**—A plug or clot in a blood vessel or in one of the cavities of the heart, formed by coagulation of the blood. It remains where it was formed.

**TINCTURE**—Usually an alcoholic solution of animal or vegetable drugs.

**TINNITUS**—Ringing in the ears.

**TOXEMIA**—Poisonous products in the blood.

**TOXICOLOGY**—The science of poisons.

**TOXINS**—Poisons.

**TRACHEOSTOMY**—Surgically creating an opening into the trachea.

**TRIAGE**—Sorting casualties to determine priority of treatment.

**TRITURATION**—A process of reducing a solid to a very fine powder by grinding in a mortar and pestle.

**URTICARIA**—Hives or welts.

**UREMIA**—A condition resulting from waste products not being removed efficiently by the kidneys so that they remain in the blood.

**VASCULAR**—Pertaining to blood vessels.

**VASOCONSTRICTOR**—An agent that constricts the blood vessels.

**VASODILATOR**—An agent that dilates the blood vessels.

**VERMICIDE**—A drug that expels worms without necessarily killing them.

**VESICANT**—A blistering drug or agent.

**VESICATION**—The process of blistering.

**VESICLE**—A small blister.

**VIRULENCE**—The degree of pathogenicity of a microorganism or its ability to invade the tissues of the host.

**WATERS**—Aqueous solutions of volatile substances.

## APPENDIX VI

# TRADEMARK COMPANIES

The following is a list of trademarks used in this manual.

<b>ACE®</b>	Becton Dickinson and Company
<b>Achromycin®</b>	Lederle Labs
<b>Actifed®</b>	Warner-Lambert Co.
<b>Adrenalin Chloride®</b>	Parke-Davis
<b>Afrin®</b>	Schering-Plough
<b>Aftate®</b>	Schering-Plough
<b>All-Bran®</b>	Kellogg's®, a registered trademark of Kellogg Company
<b>Amoxil®</b>	SmithKline Beecham
<b>Amphojel®</b>	Wyeth-Ayerst
<b>Anaprox®</b>	Roche Laboratories
<b>Ancef®</b>	SmithKline Beecham
<b>Antiminth®</b>	Pfizer
<b>Antivert®</b>	Pfizer
<b>Aralen®</b>	Sanofi
<b>Atarax®</b>	Pfizer
<b>Bactrim®</b>	Roche Laboratories
<b>Benadryl®</b>	Warner-Lambert Co.
<b>Betadine®</b>	Purdue Frederick
<b>Betapen-VK®</b>	Mead Johnson
<b>Bicillin®</b>	Wyeth-Ayerst
<b>Bleph-10®</b>	Allergan
<b>Bonine®</b>	Pfizer
<b>Bran Buds®</b>	Kellogg's®, a registered trademark of Kellogg Company
<b>Bran Flakes®</b>	Post®, a registered trademark of Kraft Foods Inc.
<b>Cardizem®</b>	Hoechst Marion Roussel

<b>Ceftin®</b>	Glaxo Wellcome
<b>Chlor-Trimeton®</b>	Schering-Plough
<b>CIDEX®</b>	Johnson & Johnson Medical, Inc.
<b>Claforan®</b>	Hoechst Marion Roussel
<b>Cleocin®</b>	Pharmacia & Upjohn
<b>Colace®</b>	Roberts
<b>Compazine®</b>	SmithKline Beecham
<b>Coumadin®</b>	DuPont
<b>Darvon®</b>	Teva Pharmaceuticals USA
<b>Demerol HCl®</b>	Sanofi
<b>Desenex®</b>	Novartis
<b>Desoxyn®</b>	Abbott Pharmaceutical
<b>Dexedrine®</b>	SmithKline Beecham
<b>Diamox®</b>	Lederle Labs
<b>Dilantin®</b>	Parke-Davis
<b>Dispenstir®</b>	Hynson, Westcott, and Dunning, Inc.
<b>Domeboro®</b>	Bayer Corporation
<b>Dramamine®</b>	Pharmacia & Upjohn
<b>Dulcolax®</b>	Novartis Consumer
<b>Dyazide®</b>	SmithKline Beecham
<b>Dynapen®</b>	Bristol-Myers Squibb
<b>Dyrenium®</b>	SmithKline Beecham
<b>E-Mycin®</b>	Knoll Labs
<b>Ecotrin®</b>	SmithKline Beecham
<b>Elavil®</b>	Zeneca
<b>Elimite®</b>	Herbert Pharma
<b>Entex®LA</b>	Proctor & Gamble Pharmaceuticals
<b>Equanil®</b>	Wyeth-Ayerst
<b>Ergostrate® Maleate</b>	Lilly
<b>Eryc®</b>	Warner Chilcott Professional Products
<b>Esidrix®</b>	Ciba-Geigy Pharmaceutical

<b>Eskalith®</b>	SmithKline Beecham
<b>Eurax®</b>	Westwood-Squibb
<b>Ex-Lax®</b>	Novartis Consumer
<b>Fansidar®</b>	Roche Laboratories
<b>Feldene®</b>	Pfizer
<b>Flagyl®</b>	Searle
<b>Flexeril®</b>	Merck
<b>Fluothane®</b>	Wyeth-Ayerst
<b>Fulvicin®</b>	Schering
<b>Gantrisin®</b>	Roche Laboratories
<b>Gentamycin®</b>	Boehringer Ingelheim
<b>Gris-PEG®</b>	Allergan
<b>Haldol®</b>	Ortho-McNeil Pharmaceutical
<b>HydroDIURIL®</b>	Merck
<b>Hygroton®</b>	Rhone-Poulenc Rorer
<b>Ilotycin®</b>	Dista
<b>Indocin®</b>	Merck
<b>Innovar®</b>	Janssen
<b>Isoptin®</b>	Knoll Labs
<b>Isordil®</b>	Wyeth-Ayerst
<b>Kaopectate®</b>	Pharmacia & Upjohn
<b>Keflex®</b>	Dista
<b>Kefzol®</b>	Lilly
<b>Ketalar®</b>	Parke-Davis
<b>Lanoxin®</b>	Glaxo Wellcome
<b>Lasix®</b>	Hoechst Marion Roussel
<b>Librium®</b>	Roche Products
<b>Lithonate®</b>	Solvay
<b>Lomotil®</b>	Searle
<b>Lotrimin®</b>	Schering-Plough
<b>Luminal®</b>	Bayer Corporation

<b>Maalox®</b>	Novartis Consumer
<b>Maxzide®</b>	Bertek
<b>Medicut®</b>	American Diagnostic Corporation
<b>Mefoxin®</b>	Merck
<b>Mellaril®</b>	Novartis Pharmaceuticals
<b>Metamucil®</b>	Proctor & Gamble
<b>Micatin®</b>	McNeil Consumer Products
<b>Minocin®</b>	Lederle Labs
<b>Mintezol®</b>	Merck
<b>Monistat®</b>	Ortho Dermatological
<b>Monosticon DRI-DOT®</b>	Organon Teknika Corporation
<b>Motrin®</b>	McNeil Consumer
<b>Multistix®</b>	Ames Company, a division of Miles Laboratories, Inc.
<b>Mycelex®</b>	Bayer
<b>Mycifradin® Sulfate</b>	Pharmacia & Upjohn
<b>Mycostatin®</b>	Westwood-Squibb
<b>Mylanta®</b>	Johnson & Johnson-Merck
<b>Nebcin®</b>	Lilly
<b>Nembutal®</b>	Abbott
<b>Neo-Synephrine®</b>	Sanofi
<b>Nitro-Bid®</b>	Hoechst Marion Roussel
<b>Nitrostat®</b>	Parke-Davis
<b>Norgesic®</b>	3M
<b>Novocain®</b>	Sanofi Winthrop Pharmaceuticals
<b>Nupercainal®</b>	Ciba-Geigy
<b>One Step II Wright-Giemsa Stain Solution®</b>	Criterion Sciences, a division of Cornwell Corporation
<b>Ophthaine®</b>	Bristol-Myers Squibb
<b>Ophthetic®</b>	Allergan
<b>Oretic®</b>	Abbott
<b>Parafon Forte DSC®</b>	Ortho-McNeil Pharmaceutical

<b>PCE Dispertab®</b>	Abbott
<b>Pen-Vee K®</b>	Wyeth-Ayerst
<b>Persantine®</b>	Boehringer Ingelheim
<b>pHisoHex®</b>	Sanofi
<b>Pitocin®</b>	Parke-Davis
<b>Polycillin®</b>	Mead Johnson
<b>Primaquine® Phosphate</b>	Sanofi Winthrop Pharmaceuticals
<b>Procan SR®</b>	Parke-Davis
<b>Pronestyl®</b>	Bristol-Myers Squibb Company
<b>Prozac®</b>	Dista
<b>Pyridium®</b>	Parke-Davis Pharmaceuticals, a division of Warner-Lambert Co.
<b>Restoril®</b>	Novartis
<b>Rifampin®</b>	Hoechst Marion Roussel
<b>Ritalin®</b>	Novartis
<b>Robaxin®</b>	Robins
<b>Robitussin DM®</b> <b>Robitussin AC®</b>	Whitehall-Robins Healthcare, a division of American Home Products Corporation
<b>Sani-Supp®</b>	Sandoz
<b>Seconal®</b>	Lilly
<b>Septra®</b>	Glaxo Wellcome
<b>Shredded Wheat®</b>	Post®, a registered trademark of Kraft Food Inc.
<b>Silvadene Cream®</b>	Hoechst Marion Roussel
<b>Sodium Sulamyd®</b>	E. Fougera & Co., a division of Altana Inc.
<b>Sorbitate®</b>	Zeneca
<b>Sudafed®</b>	Warner-Lambert Co.
<b>Sumycin®</b>	Apothecon
<b>Surfak®</b>	Hoechst-Roussel
<b>Sus-Phrine®</b>	Forest
<b>Tagamet®</b>	SmithKline Beecham
<b>Talwin®</b>	Sanofi Winthrop Pharmaceuticals
<b>Thorazine®</b>	SmithKline Beecham

<b>Tinactin®</b>	Schering-Plough
<b>Tolectin®</b>	Ortho-McNeil Pharmaceutical
<b>Trobicin®</b>	Pharmacia & Upjohn
<b>Tylenol®</b>	McNeil Consumer
<b>Unopette® Microcollection System</b>	Becton-Dickinson, a division of Becton, Dickinson and Company
<b>V-Cillin K®</b>	Eli Lilly
<b>Valium®</b>	Roche Products
<b>Vancocin®</b>	Lilly
<b>Vermox®</b>	Janssen
<b>Vibramycin®</b>	Pfizer
<b>Visine Eye Drops®</b>	Pfizer
<b>Vistaril®</b>	Pfizer
<b>Virtual Naval Hospital™</b>	A trademark of The University of Iowa
<b>Wycillin®</b>	Wyeth-Ayerst
<b>Xylocaine®</b>	Astra
<b>Zantac®</b>	Glaxo Wellcome
<b>Zinacef®</b>	Glaxo Wellcome

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